

# Marine Review

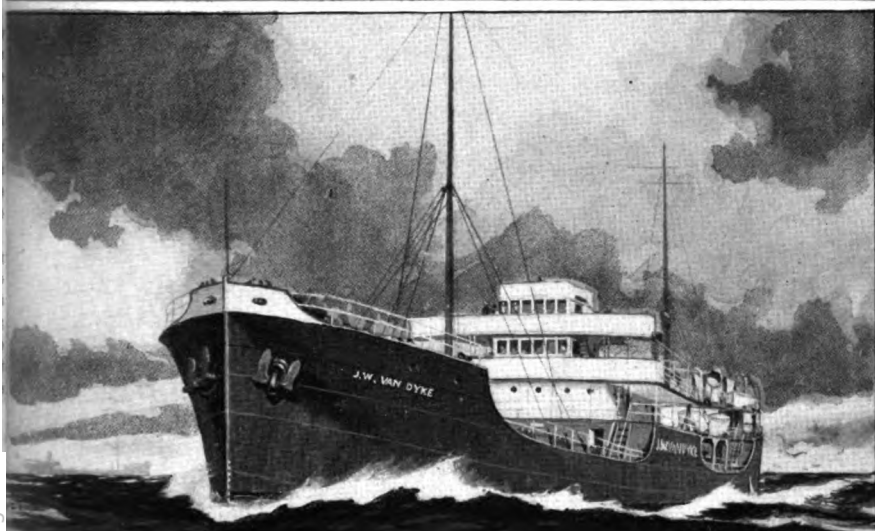
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THE BUSINESS OF TRANSPORTATION BY WATER

NEW YORK CLEVELAND LONDON

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## CARGO CAPACITY AND CRUISING RADIUS INCREASED

The "J. W. Van Dyke", the largest oil-electric ship in the world, is equipped with Ingersoll-Rand multi-cylinder, four-cycle, solid injection, marine oil engines. This tanker has logged over 85,000 miles under direct pilot house control since May 1925.

Three sister ships,—“S.S. John M. Connolly”, “S.S. Bessemer”, and “S.S. Sharon”, are being similarly converted to oil-electric drive by the Atlantic Refining Company. Ingersoll-Rand marine oil engines were selected for both main and auxiliary power. The cargo capacity and cruising radius of each tanker, like the “J. W. Van Dyke”, will be increased.

Five oil-electric ships now in service in the Atlantic Refining Fleet,—the “Brilliant”, “J. W. Van Dyke”, “Van Dyke I”, “Van Dyke II”, and “Van Dyke III”, are all equipped with Ingersoll-Rand marine oil engines.

These engines are described in a recent publication, “Marine Engines For Direct and Electric Drive”. A copy will be sent upon request.

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# Ingersoll-Rand

## Your Guide To this Issue

### Scrapping Ships

A YEAR ago Ford bought 199 ships from the government. Today these vessels are being scrapped at the rate of one every five days. A fully illustrated story tells how it is done.

See Page 11

### Unusual Methods

HAVING somewhat of a reputation for setting aside customary practice it is not surprising to find Ford trying out tools for cutting in place of burning with the torch.

See Page 15

### Old Ironsides

NATIONAL pride in the fine traditions of our navy and merchant marine needs to be re-kindled. Read what has been written by a close student of the history of this fighting vessel.

See Page 23

### Naval Reserves

UNDER proper administration, a bonus or extra pay should be given to officers of the merchant marine for naval reserve enlistment and training. It would be good for both services.

See Page 25

### Cement Cargoes

IT IS difficult to handle heavy or bulky and inexpensive materials over any dock at a profit. With excellent facilities and proper management the army base pier in Boston does handle such material profitably.

See Page 28

### A Book Review

A FAMOUS German authority on inland navigation visited this country. He set down his investigations in a book which is a remarkable portrayal of conditions.

See Page 50



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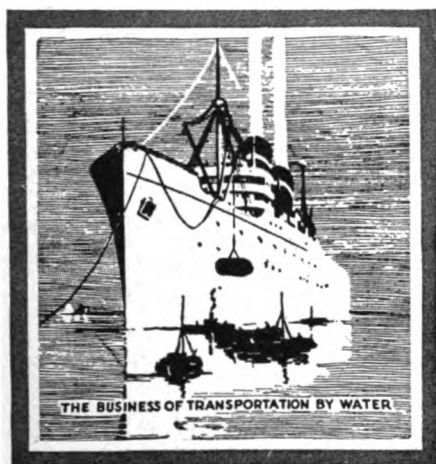
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# Marine Review

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## CONTENTS

Vol. 56

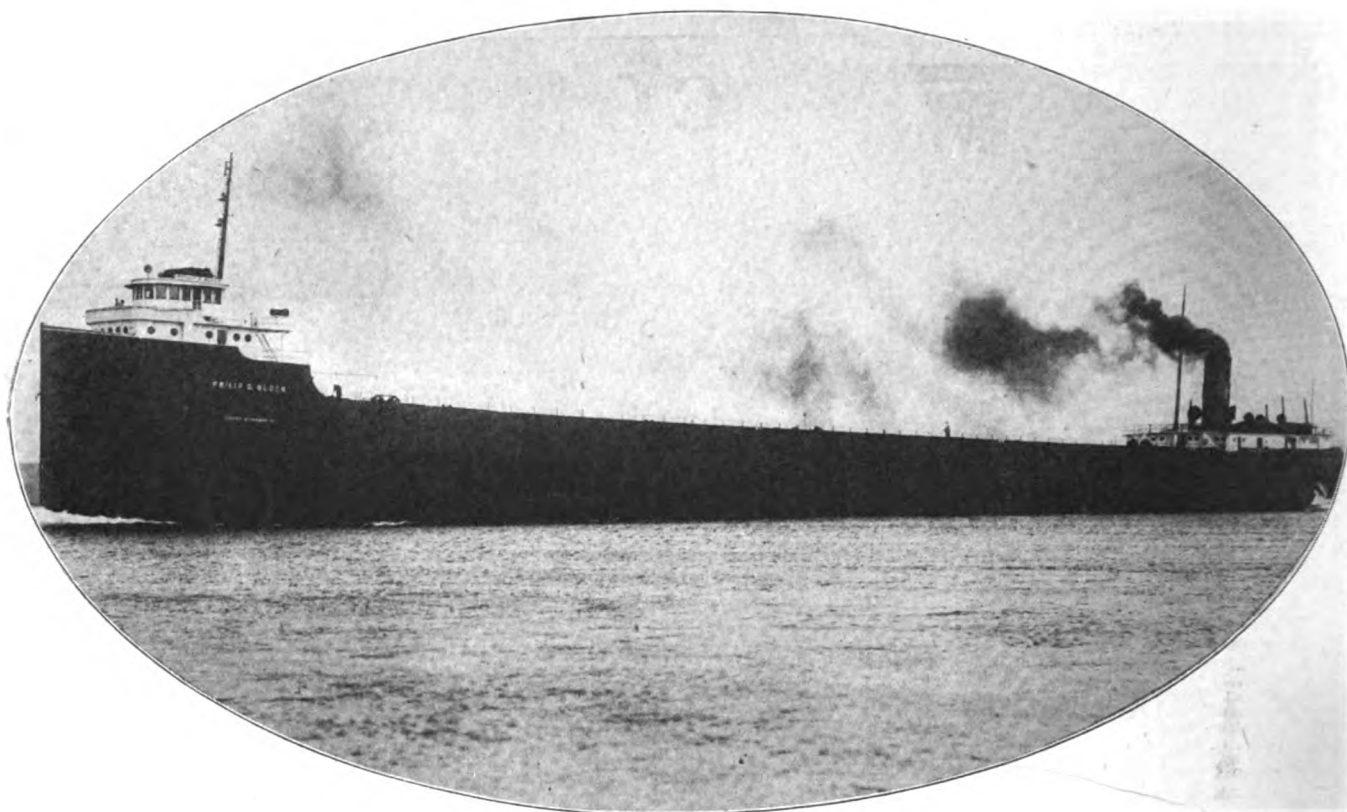
October 1926

No. 10

	Page
Ford Scraps Ships Quickly.....	11
By A. H. Jansson	
Iron Articles Dug Up.....	22
Guns and Gunnery, Old Ironsides I.....	23
By Rear Admiral Elliot Snow, Retired	
Naval Reserve from Merchant Marine.....	25
By Rear Admiral W. R. Shoemaker	
From the Old Log Book.....	26
Photographs—Latest Marine News.....	27
Dock Management Progress.....	28
Get Cement Cargoes	
By H. R. Simonds	
Personal Sketches of Marine Men.....	30
Amos S. Hebble	
By E. C. Kreutzberg	
Marine Men Inspect Port of Boston.....	32
Personals—W. S. Newell and C. E. Peterson....	34
Equipment Used Afloat, Ashore.....	38
By W. J. Barnes	
Maritime Law—Late Decisions.....	42
By Harry Bowne Skillman	
Marine Business Statistics—Ports.....	44
What the British Are Doing.....	46
What's Doing Around the Lakes.....	46
Ocean Freight Rates—Bunker Prices.....	48
Reviews of Late Books.....	50
Picture of Tanker W. W. Mills.....	52
Diesel Engine Tug Built by Manitowoc.....	58
United States Lines for Sale.....	60
Marine Disasters—Late Flashes.....	64-66
New Trade Publications Reviewed.....	68
Business News for the Marine Trade.....	68



# The American Ship



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## Marine Review



*Get Rid of Useless Idle Ships*

Unit 29 of the Laid up Fleet in the James River, Va.

# Ford Scraps Three Ships Every Five Days

BY A. H. JANSSON



RETURN to the government of less than one cent on the dollar from the sale of 199 steel vessels of its laid up emergency fleet would hardly strike the average citizen as a brilliant stroke of business. And still that is just what it was for the government. As a result of the sale of these vessels for scrap to Henry Ford, \$1,697,470 in actual cash has been recovered into the treasury of the United States and a further considerable sum may rightfully be credited to this transaction, a sum equal to the cost of continued caretaking, or sinking or other means of disposal. It is useless to talk of the possible intrinsic value of these ships as operating units. At least 800 better ships and of more suitable type have been for years and are now for sale to American citizens at prices far below the world market, with but the merest nibble of demand. Sale to others than citizens on such favorable terms is rightfully prohibited by law.

### Chairman O'Connor Negotiated Sale

The sale of this fleet for scrapping, largely due to the initiative of Chairman T. V. O'Connor of the shipping board, therefore deserves the commendation of all fair-minded Americans. But

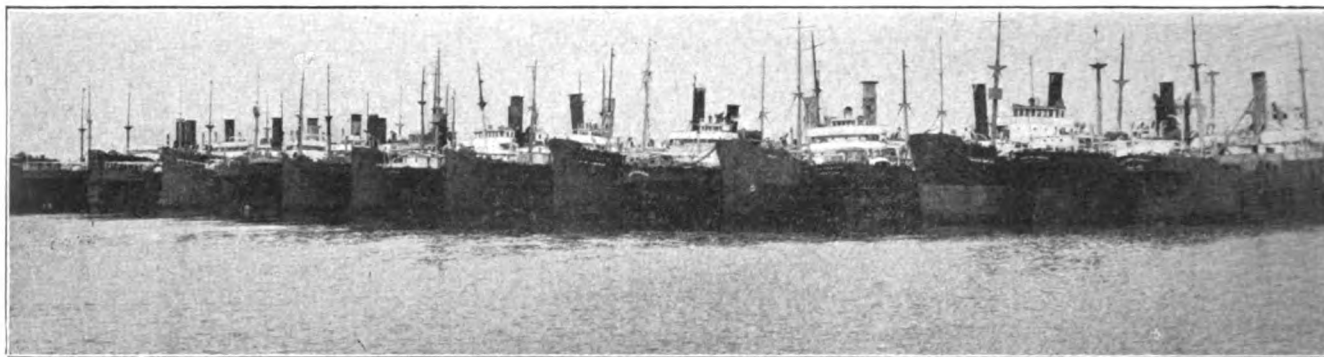
how about the purchaser, since no contract is really satisfactory where either party suffers a loss? It is now more than a year since the sale was made and the salvaging is in full swing. The present rapidity of scrapping exceeds the most optimistic predictions in which it was counted on to cut up one ship every three days. For the two weeks ending Sept. 15, in 10 working days, six complete ships were scrapped.

### Eager to Convert to Useful Purpose

The purchaser in this case seems happy in his job and entirely contented with his bargain. It is idle in an article of this nature to attempt a psychological analysis but it seems evident that Ford's reward in this job will be one of satisfaction in having accomplished a most difficult and intricate piece of work in a thoroughly workmanlike manner and that as a result he has been able to salvage and put to good use the products of man's mind and labor. It is as if he were satisfying an abhorrence of waste by stepping into the breach and stemming it with the ardor of a crusader, and at the same time perhaps unconsciously driving home a lesson in morals.

A contract executed Aug. 18, 1925 between the United States shipping board and the Ford Motor





Unit 5 of the Laid up Fleet in the James River, Va.

Co. called for delivery to the latter, on payment of \$1,697,470 in cash of 199 steel ships "where is" and "as is" for the purpose of scrapping within a specified time of something less than two years. The hulls had to be scrapped and could not be converted to any navigable use and any machinery salvaged could not be sold and if not scrapped could only be used in conjunction with the purchaser's own enterprises. The consummation of this sale represented the first serious attempt on the part of the government to get rid of a sizable block of the less desirable of the large number of useless laid up ships composing so great a part of the emergency merchant fleet.

#### Government's Scrapping Policy

In the July 1925 number of *MARINE REVIEW* the general policy of sale for scrapping was discussed editorially and the following quotation from this article brings out some interesting facts:

Asked what effect scrapping of vessels would have in maintaining a sufficient reserve for national defense and for commercial purpose, Chairman O'Connor said on May 19:

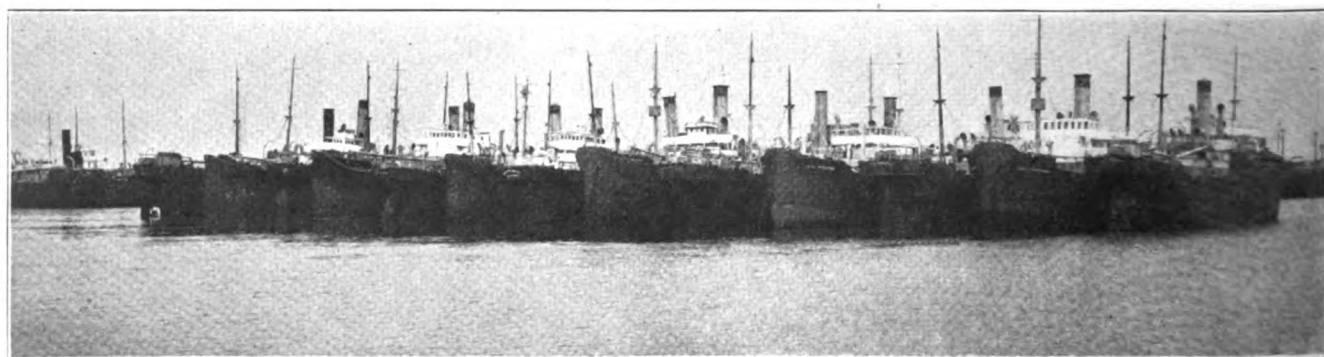
"In April of last year a committee of experts representing the war department, navy department, department of commerce, together with representatives of the shipping board and the Emergency Fleet Corp., after a survey of the government fleet, made to me the following report concerning

TABLE I

### Lakers Bought by Ford for Scrapping

Name	Design	Location	Year Built	Where Built	By Whom Built
LAKE AKKRA.....	1020	Norfolk	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE ALVADA.....	1020	New York	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE AURICE.....	1020	New Orleans	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE BEACON.....	1020	Norfolk	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE BENBOW.....	1020	Orange, Tex.	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE BERDAN.....	1020	Orange, Tex.	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE BLANCHESTER.....	1020	New York	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE BLEDSOE.....	1020	Norfolk	1918	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE BUCKEYE.....	1020	Norfolk	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE CAROON.....	1020	New York	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE CALISTOGA.....	1020	New York	1918	Toledo, Ohio	Toledo Shipbldg. Co.
LAKE CALLICOON.....	1020	Orange, Tex.	1918	Toledo, Ohio	Toledo Shipbldg. Co.
LAKE CATHCOON.....	1020	Norfolk	1918	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE CHARLOTTESVILLE.....	1020	Philadelphia	1919	Toledo, Ohio	Toledo Shipbldg. Co.
LAKE COPLEY.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE DANCEY.....	1020	New Orleans	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE DARAGA.....	1020	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE DELANCEY.....	1020	Norfolk	1918	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE DESHA.....	1020	New Orleans	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE DEVAL.....	1020	Philadelphia	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE DUNCAN.....	1020	Norfolk	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE DYMER.....	1020	Orange, Tex.	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE ECKHART.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE ELIKO.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE ELSINORE.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE ENNIS.....	1020	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FONDULAC.....	1020	En. Detroit	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE GAKONA.....	1020	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GARZA.....	1020	New York	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE GASPARE.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE GEDNEY.....	1020	Norfolk	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE GLEBE.....	1020	Norfolk	1919	Superior, Wis.	Amer. Shipbldg. Co.
LAKE GLENCOE.....	1020	Norfolk	1919	Superior, Wis.	Amer. Shipbldg. Co.
LAKE GORIN.....	1020	New Orleans	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GORMANIA.....	1020	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GOVAN.....	1020	Mobile, Ala.	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE HEWES.....	1020	Norfolk	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE LARGA.....	1020	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE LASANG.....	1020	Orange, Tex.	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE LEDAN.....	1020	New York	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE LEMANDO.....	1020	Norfolk	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE LESA.....	1020	Norfolk	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE MATTATO.....	1020	New York	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE NARKA.....	1020	New York	1918	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE ORMOC.....	1020	New Orleans	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE OTSQUAGE.....	1020	New Orleans	1918	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE PICKAWAY.....	1020	New York	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE STRABO.....	1020	Norfolk	1919	Toledo, Ohio	Toledo Shipbldg. Co.
LAKE YAHARA.....	1020	Norfolk	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE YELVERTON.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.

(Continued in Table II on Page 13)



UNIT 10 OF THE LAID UP FLEET IN THE JAMES RIVER, VA.





Unit 16 of the Laid up Fleet in the James River, Va.

## TABLE II Lakers Bought by Ford for Scrapping

(Continued from Table I on Page 12)

Name	Design	Location	Year Built	Where Built	By Whom Built
LAKE YEMASEE.....	1020	Norfolk	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE YPSILANTI.....	1020	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE ZALISKI.....	1020	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
CALAVERAS.....	1020	Norfolk	1918	Toledo, Ohio	Toledo Shipbldg. Co.
LAKE BELNONA.....	1020-B	Norfolk	1918	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE CANAVERAL.....	1020-B	Norfolk	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE CANDELARIA.....	1020-B	New York	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE CANNONSBURG.....	1020-B	New York	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE FEAR.....	1020-B	Norfolk	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE GIRARDEAU.....	1020-B	Norfolk	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE LICOCO.....	1020-B	New York	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE LILICUSUM.....	1020-B	New York	1918	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE OSWEYA.....	1020-B	Norfolk	1918	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE PACHUTA.....	1020-B	Norfolk	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE SABA.....	1020-B	Norfolk	1919	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE WINOOSKI.....	1020-B	Norfolk	1918	Saginaw, Mich.	Saginaw Shipbldg. Co.
LAKE JANET.....	1042	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE PEARL.....	1042	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE SANFORD.....	1042	New Orleans	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKEVILLE.....	1042	Philadelphia	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE GARDNER.....	1042	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE MARION.....	1042	New Orleans	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE KYTTLE.....	1044	Philadelphia	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE LINDEN.....	1044	New Orleans	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE WILSON.....	1044	Norfolk	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE FARESMAN.....	1093	New York	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FARGE.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FLUME.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FLUSHING.....	1093	Philadelphia	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FLYNUS.....	1093	New Orleans	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FOLCROFT.....	1093	New York	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FONDA.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FONTANA.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FONTANET.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FORKVILLE.....	1093	New Orleans	1919	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE FORSBY.....	1093	Norfolk	1919	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE FOSSIL.....	1093	Orange, Tex.	1919	Cleveland, Ohio	Amer. Shipbldg. Co.
LAKE FOSTORIA.....	1093	Norfolk	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE FOXBORO.....	1093	Philadelphia	1918	Superior, Wis.	Amer. Shipbldg. Co.
LAKE FOXCRAFT.....	1093	New Orleans	1919	Superior, Wis.	Amer. Shipbldg. Co.
LAKE FRAICHRUR.....	1093	New Orleans	1919	Superior, Wis.	Amer. Shipbldg. Co.
LAKE FRALEY.....	1093	New York	1919	Superior, Wis.	Amer. Shipbldg. Co.
LAKE FRANCONIA.....	1093	Orange, Tex.	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FRAY.....	1093	Norfolk	1918	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FREEZE.....	1093	New York	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FREEBORN.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FREED.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FREELAND.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FREEZEOUT.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FRENCHTON.....	1093	New Orleans	1919	Lorain, Ohio	Amer. Shipbldg. Co.

(Continued in Table III on Page 20)

this phase of the question, which corroborates my estimate of 400 vessels in operation; 400 in reserve, and 400 to be scrapped as useless:

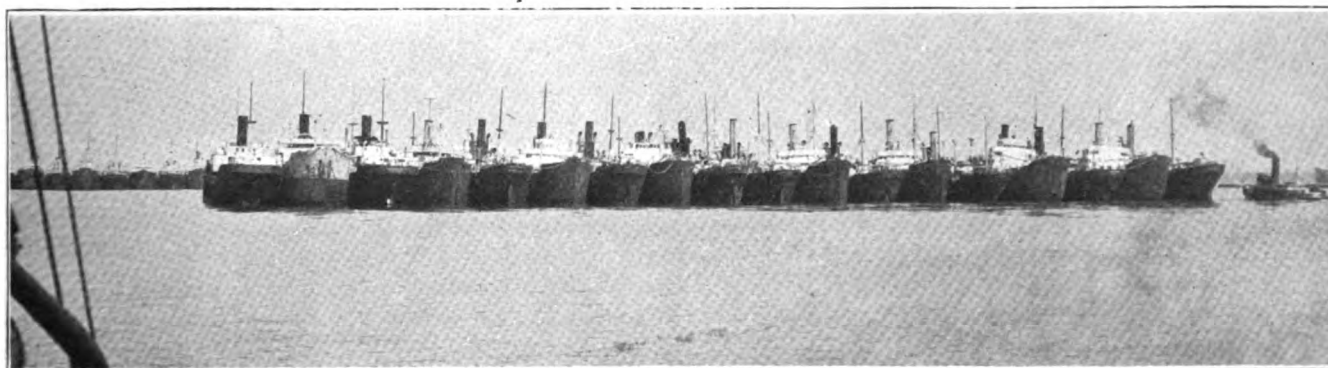
Entire Fleet	
Active and spot ships.....	360
First reserve .....	187
Second reserve .....	112
Surplus .....	521
Total .....	1180

"Under the conditions outlined above the following cargo vessels listed according to deadweight are in excess of the commercial needs and are not required in connection with the military services."

Cargo Vessels	
Vessels 10,000 and above .....	3
Vessels 9000 to 10,000 .....	27
Vessels 8000 to 9000 .....	55
Vessels 7000 to 8000 .....	5
Under 7000 except "Lakers" .....	129
Vessels known as "Lakers" .....	302
Total .....	521

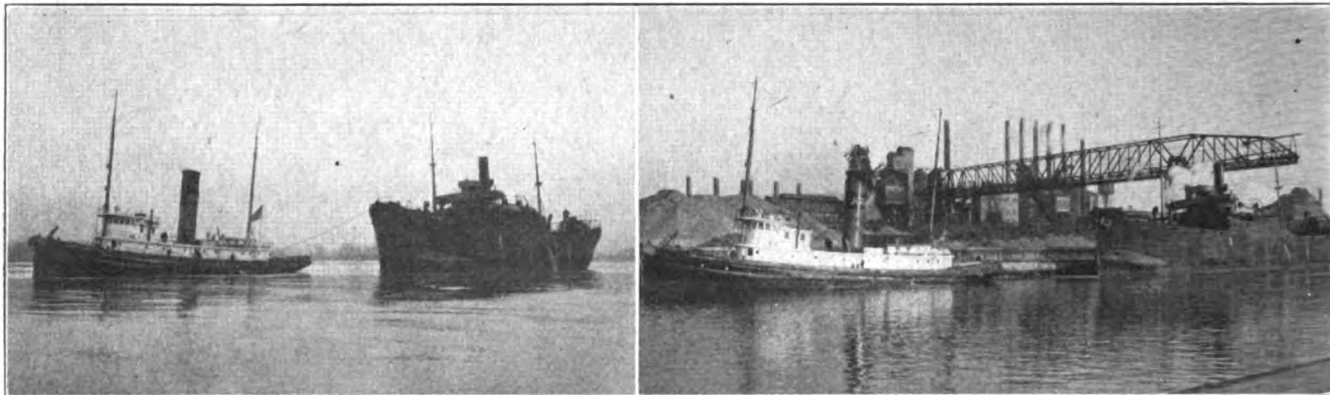
"Under the assumed conditions this number of vessels represents a clear surplus which are not required for either the national or commercial needs of the country, which are expensive to maintain, which are continually deteriorating and which should, therefore, be disposed of as early as practicable under whatever general policy may be adopted."

From this it will be seen that counting a number of the better ships that have been sold since this time and subtracting the 199 bought by Ford that there still remains between 275 and 300 ships which as long ago



UNIT 7 OF THE LAID UP FLEET IN THE JAMES RIVER, VA.





At left—Taken Dec. 17, 1925—Tug BALLCAMP towing the first of the vessels to be scrapped, the LAKE FONDULAC, in Detroit river near entrance to River Rouge—At right—Taken Dec. 18, 1925—LAKE FONDULAC in tow of the tug BALLCAMP at ore dock of the Fordson Plant

as April 1924 after careful responsible investigation on the part of a distinguished committee of experts were placed in the category of useless and unnecessary either for the national or commercial needs of the country.

#### Ford Bought 199 Ships

Of the 199 vessels sold to Ford for scrapping, 149 were "Lakers" and the remaining 50 were what is known as the "Submarine" boat type. The "Lakers," so called because they were all built in shipyards located on the Great Lakes, are of approximately identical dimensions and arrangement, limited in length and beam to Welland canal size. With slight variations the dimensions are: length overall 261 feet, length between perpendiculars, 251 feet, beam molded 43 feet 6 inches and depth 22 feet 6 inches to 28 feet 2 inches. They are coal burners of three island, single deck, single screw cargo type and have three cylinder reciprocating engines of about 1000 to 1400 indicated horsepower and two scotch boilers. The deadweight varies from a minimum of 3280 tons to a maximum of 4155 tons. These vessels were built during 1918 and 1919 largely by the old established yards such as the American Ship Building Co., the Great Lakes Engineering Works, Toledo Shipbuilding Co. and Manitowoc Shipbuilding Co.

The 50 ships of the "Submarine" boat type were built during 1918, 1919 and 1920 by the Submarine Boat Corp. at Newark, N. J. These vessels are 335 feet 6 inches in length overall, 324 feet in length between perpendiculars, 46 feet in beam and 28 feet 6 inches in depth. They are oil burners of three island, single deck (with tween deck beams in Nos. 1 and 4 holds), single screw cargo type and have Westinghouse turbines with gear reduction of 1440 shaft horsepower and two Babcock & Wilcox water tube boilers. The dead-

weight varies from 5085 to 5340 tons, though they are of identical design.

It was a part of the terms of the contract that the vessels were to be turned over to the purchaser at their respective anchorages. The number in each class and location was specified. Of the 149 "Lakers" of various classes 90 were laid up at Norfolk, Va., 9 at Hog Island, Pa., 14 at Jones' Point, N. Y., on the Hudson, 7 at Staten Island, N. Y., 9 at Orange, Texas, 2 at Mobile, Ala., and 18 at New Orleans. Of the 50 "Submarine" type, 19 were laid up at Norfolk, Va., 12 at Hog Island, Pa., 16 at Jones' Point, N. Y., on the Hudson, and 3 at Staten Island, N. Y.

That was the situation in the late summer a year ago. The government was well rid of 199 useless ships, was in pocket \$1,697,470 and Ford was faced with the problem of scrapping these ships in accordance with the terms of the contract. The ultimate object was of course the delivery of scrap to the cupolas and open-hearth furnaces at the Fordson plant on the River Rouge at Fordson, Mich., and the delivery to this and other Ford plants of all useable salvaged materials and machinery, at the lowest possible cost. We shall soon see how successfully and energetically this program is now being executed.

It was recognized at the time of the purchase that towing would be an operation of major importance in any program adopted on account of the distant and widely separated anchorages of groups of units of the fleet to be scrapped and consequently seven seagoing steel tugs were acquired from the shipping board by the Ford Motor Co. at a cost of \$42,500 each. These tugs were built for the shipping board during 1918 and 1919 at Elizabeth, N. J., and at New York and are 142 feet long, 27.7 feet wide with an extreme draft of 14.8 feet. They are coal burners and have a triple expansion steam engine

with cylinders 17 x 25 x 43 inches in bore and 30 inches stroke. The names are: BALLCAMP, BAYMEAD, BARLOW, BUTTERCUP, BARRALLTON, HUMRICK and BATHALUM. For good coal the consumption per day running is 18 tons.

After adoption of the present plan late in the fall of 1925 it became a matter of urgency to act quickly in order to thoroughly test its feasibility. Ships were located as noted above at three points in the Gulf, in the James river near Norfolk, Va., at Hog island on the Delaware near Chester, Pa., at Staten Island, N. Y., and at Jones' Point on the Hudson river. Shipyards at three points, Federal Shipbuilding & Drydock Co. at Kearny, N. J., Sun Shipbuilding & Drydock Co. at Chester, Pa., and later the Southern Shipbuilding Co. at Newport News, Va., were commissioned to begin scrapping certain units. The plan was that these yards should scrap only the "Submarine" type in sizes suitable for loading into "Lakers" which stood by for this purpose. After being loaded to the permissible draft these "Lakers" were to be towed to Detroit via the St. Lawrence and the Welland canal.

#### One Vessel for Experiment

With winter coming and the close of navigation approaching on the Great Lakes it was most important to get at least one vessel through to Detroit so that experiments in scrapping could be carried on in order to determine the best methods and what equipment would be necessary. The LAKE FONDULAC was therefore withdrawn from the fleet at New York, Nov. 9, 1925, and after the necessary reconditioning to permit steam on one boiler and the use of the steering gear, pumps, winches and windlass, with not a day to spare in order to get through, left the Ford plant at Kearny, N. J., Nov. 15, 1925, in light condition towed by one of the

Ford tugs. She encountered heavy weather on the way and arrived safely at the Fordson plant, Fordson, Mich., Dec. 17, after making stops at Portland, Me., Quebec, Montreal, Ogdensburg, N. Y., Port Dalhousie at the entrance and Port Colborne at the terminus of the Welland canal. The total time enroute from New York was 32 days, 10 hours and 50 minutes. Delays due to weather, traffic, etc., accounted for 11 days 18 hours and 47 minutes of the total elapsed time. Accompanying illustrations show the LAKE FONDULAC towed by the tug BALLCAMP in the Detroit river and at the ore dock at the Fordson plant.

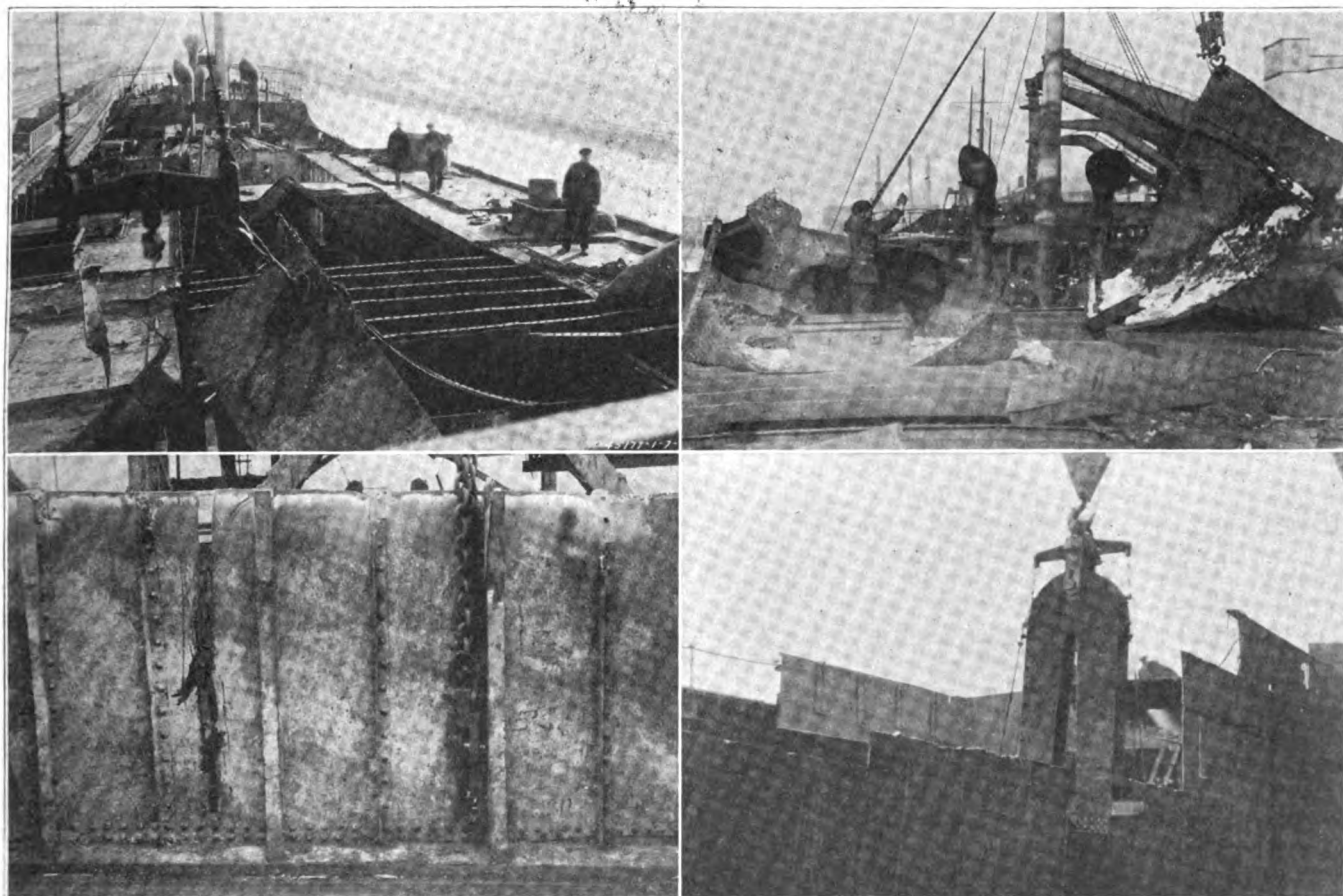
No time was lost in beginning the experiment of scrapping. With his well known reluctance to accept customary methods as necessarily the best Ford tried out some of his own. He wanted to reduce torch cutting to a minimum. Pressure exerted under decks by a powerful hydraulic ram in conjunction with hooking the crane falls to a corner of the deck plate and so ripping it off the beams, was tried. Special knives attached to the crane falls were used for slit-

ting the hull side plates vertically. The accompanying illustrations show some of these operations and the results. The vertical cutter worked well but it depends upon a clear unobstructed wall structure. The ripping off of plates produced annoying distortions which rendered difficult the further reduction in size of the scrap.

In the meantime plans were being carried out for a substantial dock along the entire length of the side of the slip directly across from the ore dock. Three sets of railroad tracks and a set of widely spaced rails including a third rail for gantry cranes were laid down. Feeder tracks joining with those on the dock were built giving connection with the large new open-hearth furnaces and to near and distant storage sectors. Throughout the winter and spring while studying the scrapping problem in detail and experimenting in every conceivable way with the LAKE FONDULAC, the question of equipment to carry out operations on a large scale was carefully considered.

It is now necessary to consider briefly what was going on during

this time at the three Atlantic coast shipyards given contracts to carry out certain scrapping operations. According to the plan each of these yards were to scrap only the "Submarine" type of boats into sizes suitable for loading in "Lakers" the latter when loaded to be towed to Detroit by Ford tugs. The Federal Shipbuilding & Drydock Co., Kearny, N. J., began scrapping operations on the "Submarine" type boat OPEQUAN Nov. 18, 1925, and on the LAKE CANDELARIA (an experiment on this type and the only "Laker" scrapped by a coast yard) Nov. 24, 1925. Scrapping of "Submarine" type boats by the Sun Shipbuilding & Drydock Co., Chester, Pa., and by the Southern Shipyard Co., Newport News, Va., also commenced during the winter and is now under way. There is nothing unusual about the methods employed. All the detachable parts are removed and then acetylene burners are used to cut up the steel structure which is loaded into waiting "Lakers." The machinery of all kinds is salvaged intact. When the hull has been cut down to near the double bottom, this part is



TRYING OUT NOVEL METHODS OF SCRAPPING ON THE FIRST VESSEL OF THE FLEET, THE LAKE FONDULAC, BROUGHT TO THE FORDSON PLANT, DETROIT—UPPER LEFT—PHOTO TAKEN JAN. 7, 1926, RIPPING DECK PLATES OFF WITH CRANE FALLS AIDED BY HYDRAULIC JACK UNDER PLATES—UPPER RIGHT—JAN. 16, 1926—TWISTED AND TORN DECK PLATES SHOW GREAT FORCE APPLIED—LOWER LEFT—JAN. 20, 1926—SLITTING TOP SIDES OF HULL WITH HOOK KNIFE ON CRANE FALLS—LOWER RIGHT—SLITTING HULL SIDES AT SIX FEET SPACING BY SPECIAL ROLLER CUTTER IN A HEAVY FRAME ATTACHED TO CRANE FALLS. AT LAPS AND THROUGH RIVET HEADS A THICKNESS OF TWO INCHES WAS SHEARED IN THIS MANNER.



towed on a marine railway or into dry dock for final cutting up. Up to the middle of September of this year the Sun Shipbuilding & Drydock Co. had completely cut up seven vessels and there are four in process, the Federal Shipbuilding & Drydock Co., five vessels completely and six in process, and the Southern Shipyard Co., five vessels completely and four in process.

#### Ships Widely Distributed

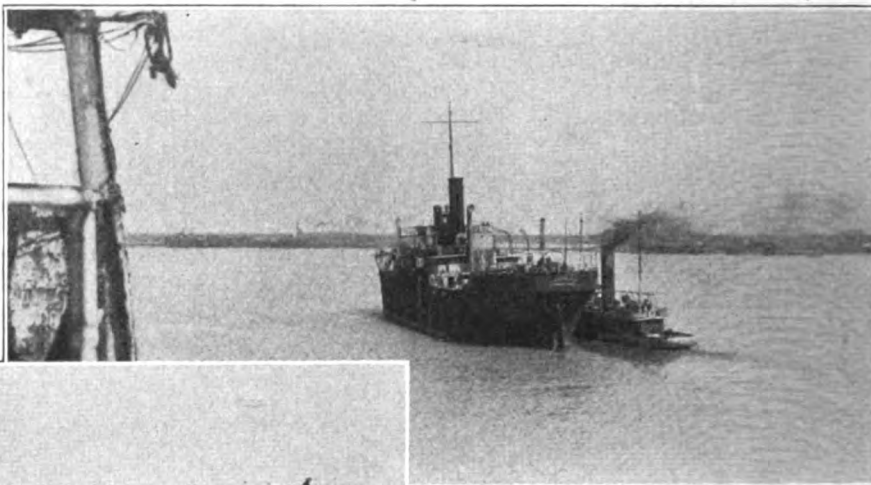
It will be recalled that 29 "Lakers" of the fleet to be scrapped were located in the Gulf, 18 at New Orleans, 2 at Mobile, Ala., and 9 at Orange, Texas. It was necessary to tow these vessels either light directly to Detroit or light to one of the three coast shipyards where scrapping was going on and where they could be loaded for final towing to Detroit. To supply the anticipated demand for ves-

York to Montreal and Detroit. The three steamers and five of the tugs operate between the seaboard and Montreal while the two remaining tugs operate on the Great Lakes.

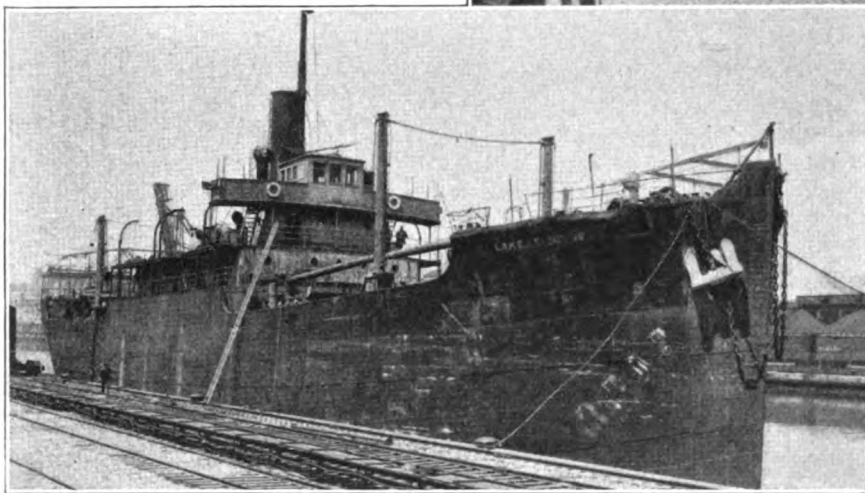
On April 14, 1926, the "Lakers" ELIZABETH and FRENCHTON left New Orleans in tow for Detroit where they arrived on May 31, after an elapsed time of 46 days 7 hours and 30 minutes including delays of 9 days

week. If all goes well there is good reason to anticipate the arrival of 37 additional vessels before the close of navigation.

Coincident with the arrival of the ELIZABETH and the FRENCHTON the new dock, accommodating 10 vessels in line, with tracks laid, equipped with five traveling gantry cranes of shipyard type, four locomotive cranes and one 200-ton wrecking crane and a



LAKE ELIZABETH IN TOW FROM NEW ORLEANS—APRIL 14, 1926—FIRST UNIT FROM THE FLEET AT THIS POINT



LAKE ELIZABETH AFTER ARRIVAL IN DETROIT, MAY 31, 1926, TIED UP AT THE NEW DOCK READY TO BE SCRAPPED

special drydock for lifting the cut down hulls for final cutting up, was completely ready for scrapping operations on a greater scale than ever before attempted. Without a personal inspection it is difficult to realize with what order, neatness and dispatch this tremendously large scrapping program is being carried out. Every tool necessary to lighten and to expedite labor has been supplied.

#### Cranes for Ship Scrapping

By June 1, 1926, four 60-ton standard gage locomotive cranes had been purchased and were in operation. Each crane has a 60-foot lattice boom. Air brakes are applied on all eight wheels, and there are special combination beam and roller type outriggers. The lifting capacity for a 16-foot radius is 120,000 pounds; for a 25-foot radius 74,000 pounds; and for a 60-foot radius 20,000 pounds, in each case without outriggers. Five gantry type cranes were bought. They are 35-ton, 8-wheel, 5-motor, variable radius gantry cranes with main and auxiliary hoists and traveling and rotating superstructure. The capacity is 35 tons at a 20-foot radius and 15 tons at a 55-foot radius while the auxiliary hoist capacity is 3 tons. These cranes are of the customary shipyard type. Each crane is equipped with two 85-horsepower 550 revolutions per minute

sels at Detroit it was realized that additional towing units would be necessary. The Ford Motor Co. therefore arranged for the reconditioning of three of the "Lakers" lying at anchor in that port. The names of the reconditioned steamers are LAKE BENBOW, LAKE ORMOCK and LAKE GORIN. Towing of "Lakers" from the Gulf with the three reconditioned steamers and tugs commenced early in the spring.

#### First Two Ships Arrive

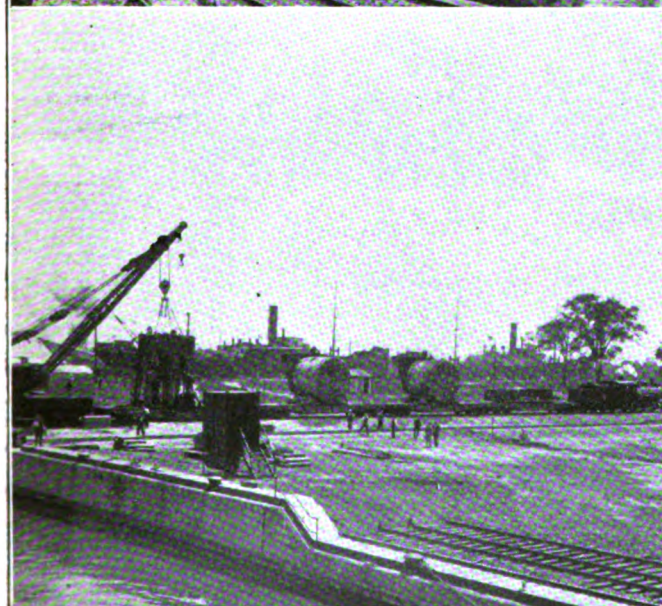
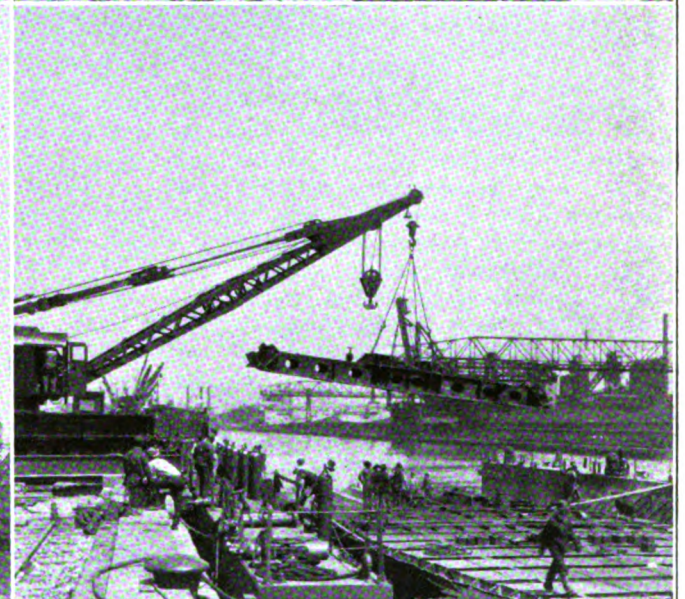
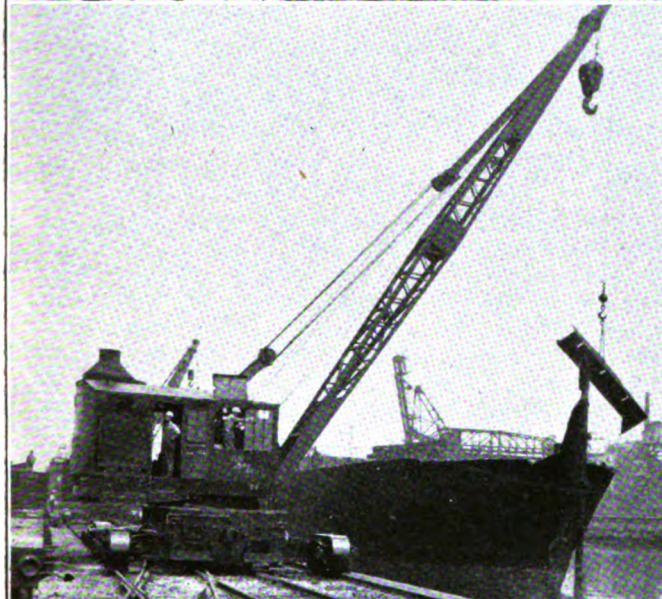
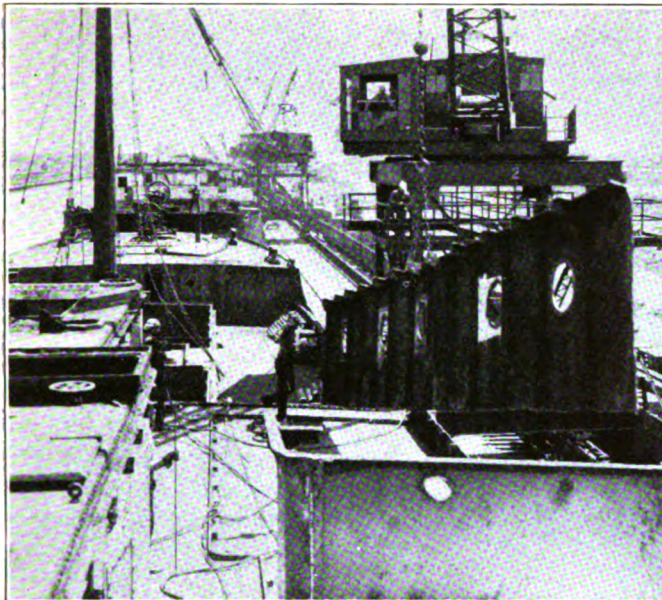
The last vessel was towed from Mobile to New York, from New Orleans to Detroit and from Orange, Tex., to Fordson, Mich., on March 4, April 20 and May 25, 1926, respectively. All of the seven tugs and the three reconditioned steamers are now kept busy every minute in towing vessels loaded with scrap from Norfolk, Va., Chester, Pa., and New

York to Montreal and Detroit. Their itinerary may be tabulated as follows:

Port	Arrival	Departure
New Orleans .....	April 14	April 14
Quebec .....	May 17	May 17
Montreal .....	May 18	May 18
Ogdensburg, N. Y. ....	May 24	May 25
Port Dalhousie .....	May 27	May 28
Port Colborne .....	May 28	May 29
Fordson, Mich. ....	May 31	

These two vessels were the first to arrive at the Fordson plant this year. On account of the exceptionally late and severe ice conditions on the Lakes progress in bringing in additional vessels was necessarily slow at first, but since May 31, up to Sept. 17 55 boats have arrived. A total of 31 of these have been loaded with 1000 tons of scrap each, from the coast yards where the "Submarine" type are being dismantled. Vessels for scrapping and with scrap in their holds are therefore now arriving at Detroit at the rate  $3\frac{1}{2}$  each





SHIP SCRAPPING OPERATIONS AT THE FORDSON PLANT, FORD SON, MICH. UPPER LEFT—JUNE 30, 1926—UPPER RIGHT—JULY 12—A LINE OF 10 SHIPS AT NEW DOCK—VARIOUS STAGES OF DISMANTLING—CENTER LEFT—JULY 6—LOADING CUT SCRAP FROM SHIP TO CARS—CENTER RIGHT—JUNE 28—FINAL CUTTING UP—DOUBLE BOTTOM IN DRY DOCK—POWERFUL WRECKING CRANE LIFTING SECTIONS CUT—LOWER LEFT—JUNE 25—A COMPLETE SHIP'S POWER PLANT LOADED ON FLAT CARS BY WRECKING CRANE—LOWER RIGHT—JULY 6—BURNING MAIN DECK FROM SIDE TO SIDE IN SECTIONS 6 FEET LONG FORE AND AFT



direct-current motors and three 25-horsepower 725 revolutions per minute direct-current motors.

As a remarkably fine working machine the locomotive wrecking crane of 200-tons capacity mounted on two 6-wheel trucks, is of special interest. It is capable of easily lifting the entire main engine, weighing 75 tons, or a boiler, weighing over 50 tons, intact from its foundation in the ship's hold and placing it on a specially built flat car. The time required to lift one engine and two boilers from a ship and placing all of them on flat cars averages  $1\frac{1}{2}$  hours. As it travels on the standard gage track it can readily be moved to any part of the storage sector and can unload boilers, and engines from flat cars and place them in position for storage. This powerful crane has been designed for the heaviest class of railroad wrecking service and provides the maximum lifting capacity obtainable in the locomotive type of crane. It is provided with Westinghouse air brakes, telescopic outriggers and is fitted with a boom 50 feet long to main hoist pin with an 8-foot extension to the auxiliary hoist pin. The lifting capacity with outriggers in place is 200,000 pounds at a 30-foot radius and 160,000 pounds at 35-foot radius. The weight of this crane ready to operate is 366,000 pounds. It is operated by steam. The foundation in-

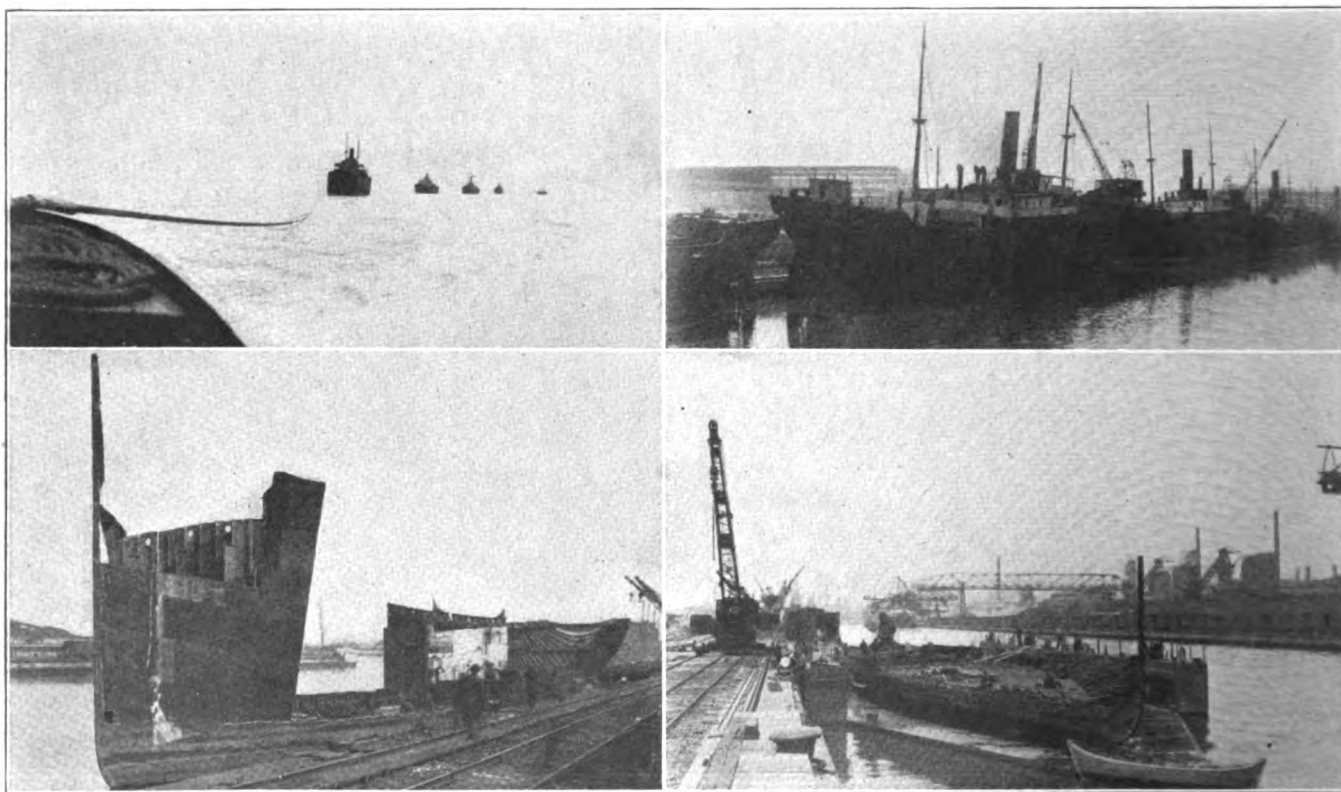
way of the dock at the point where the industrial wrecker operates required 88 piling driven into the ground and tied together with concrete. Each piling is estimated to hold a load of 25 tons. There is a maximum reaction at the end of the center outrigger, 13 feet from the center of the crane, of 350,000 pounds.

#### Special Dry Dock Built

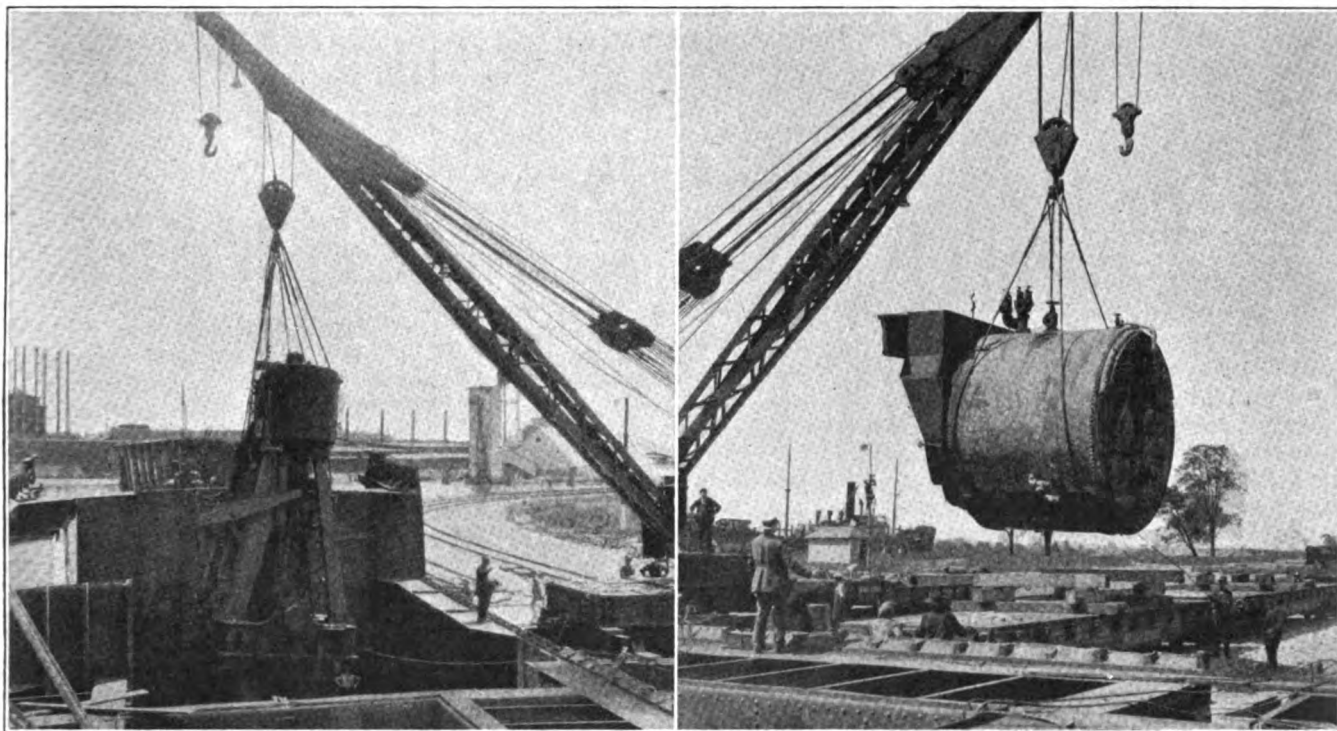
Another very special and interesting piece of equipment is the dry-dock moored at the extreme far end of the slip and used for the final step in scrapping ships. This dry-dock was designed and constructed by the Great Lakes Engineering Works, Detroit, and was delivered to the Fordson plant June 5, 1926. It was ordered on March 22. The weight of the drydock is approximately 500 tons and the lifting capacity is an equal amount. It is built in one section, the length of the pontoon being 250 feet, depth 5 feet, length of side walls 150 feet, width of side walls  $5\frac{1}{2}$  feet and depth of side walls  $12\frac{1}{2}$  feet. It is built of  $12\frac{1}{2}$ -pound steel plate throughout with transverse floors of 14-pound plate every 25 feet. There are three lines of trussed longitudinals on each side of the center keelsom. The framing is on the transverse system and is of 3 x 5 inches by 9.8-pound angles spaced 30

inches. Seven lines of concrete girders run longitudinally on the deck of the pontoon spaced six feet apart each concrete girder is 17 inches high and 12 inches thick and is for support to the bottom of the vessel when docked. Four centrifugal pumps are installed in the side walls on one side of the dock where they may be controlled easily. They are driven through vertical shafts by 5-horsepower motors installed on the top of the side walls. The suction side of each pump is connected to a cast-iron header having two six-inch suction lines leading to the pontoon on each side of the center keelsom. The pontoon is divided into 12 water-tight compartments. An 8-inch filling valve is also connected to each header. There is a six-inch valve on each six-inch suction line on the pump discharge and an eight-inch valve on the filling side of the header. The stems of these valves are carried up through the deck of the side wall to stands 20 inches high with hand-controlled wheels. Connections are provided on headers at each end of the dock, for air, gas, oxygen and electric power.

This drydock may be rebuilt to handle commissioned ships within its capacity by adding approximately 30 feet in length to the present side walls and 10 feet in height for the length of the present side walls. It



ON THE WAY TO DESTRUCTION—UPPER LEFT—AUG. 25, 1926—FOUR BOATS IN TOW ON LAKE ERIE APPROACHING DETROIT—UPPER RIGHT—JUNE 18, BOATS LINED UP ALONG WHARF FOR SCRAPPING—LOWER LEFT—JULY 16—GUTTED AND NEARLY READY FOR LAST STEP IN DRY DOCK—LOWER RIGHT—JUNE 23—REMNANT OF HULL BEING CUT UP IN DRY DOCK



Lifting the engine and boilers intact out of a cut down hull at Fordson—The capacity of the crane is 100 tons—Taken June 25, 1926

is estimated that it will cost about \$27,000 to make the changes so that it will be suitable for commissioned ships after the ship scrapping has been completed. In its present condition it takes two hours to sink the dock to the 4-foot level. By the time the last piece is off the drydock the dock is partially submerged. With one of the ship bottoms in the drydock the time required to raise the dock is 1½ hours. It can be said that men are working on the hull bottom by the time it is out of the water.

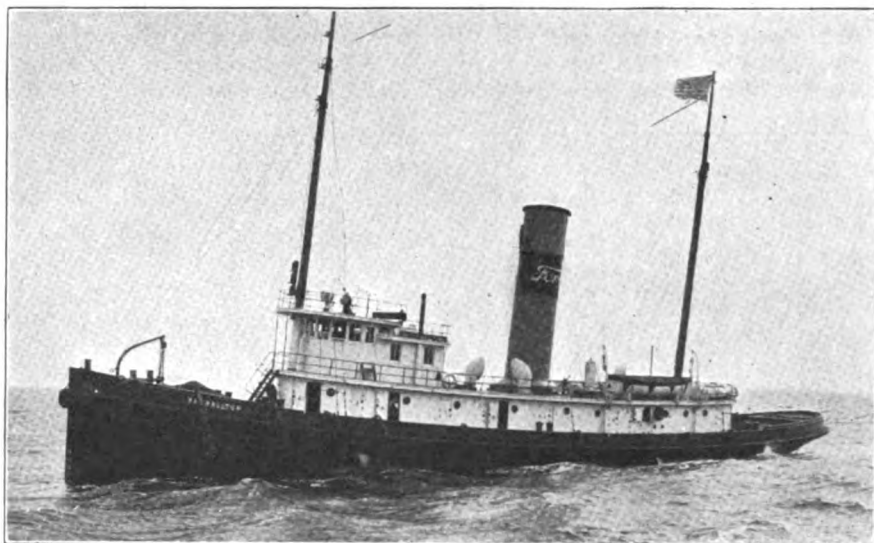
#### Make Own Oxygen

Cutting by torch is one of the major operations in the ship scrapping program. At first bottles of oxygen and acetylene gas were used. To reduce the cost and to make the supply of gas and oxygen as convenient and flexible as possible the Ford company decided to install an oxygen plant capable of producing 2000 cubic feet of oxygen per hour at a purity of 99.5 per cent. In the meantime entirely successful experiments were carried out using coke oven gas of which there was a plentiful supply within the yard itself. The oxygen plant was completely erected ready for operation on June 6. The plant was furnished and installed complete in every way in the 14-inch steel mill building at the Fordson plant. The manufacture of oxygen consists of extracting oxygen from the air by the liquifaction process. The air is liquified and the nitrogen is first allowed

to evaporate. It consists chiefly of the following items: two steel low pressure purifying towers; one four-stage compressor; one steel solution mixing tank; one four-stage compressor; one steel oil separator cylinder with valve; one air drying and purifying battery consisting of eight high pressure seamless drawn steel cylinders, one steel high pressure air filter cylinder; one rectifying column constructed of an outer steel shell with spiral copper coils; one thawing coil and steel container; one oxygen meter for a maximum flow of 2500 cubic feet per hour; one gas holder with capacity for 1500 cubic feet of oxygen, constructed of

3/16-inch steel braced with 2-inch angles; one high pressure oxygen compressor to compress 3500 cubic feet of oxygen to 150 atmospheres; one charging manifold of 20 connections with control gage, check valve, shut-off valves and connecting piping of high pressure copper construction and the piping, valves, fittings, gages and safety devices necessary for proper operation.

Pipe lines of oxygen, coke-oven gas and compressed air run along the outer side of the entire length of the new dock provided for the scrapping operations. There are frequent connections to these pipe lines from which rubber hose may be run on



TUG BARRALTON AT HAMPTON ROADS, VA., ONE OF THE FLEET OF SEVEN FORD TUGS



TABLE III

## Lakers Bought by Ford for Scrapping

(Continued from Table II on Page 13)

Name	Design	Location	Year Built	Where Built	By Whom Built
LAKE FRIAR.....	1093	New York	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FRIO.....	1093	Orange, Tex.	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FROLONA.....	1093	New York	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FRUGALITY.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FRUMET.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE FUGARD.....	1093	Norfolk	1919	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE FURLEY.....	1093	New Orleans	1919	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE FURLOUGH.....	1093	Norfolk	1919	Buffalo, N. Y.	Amer. Shipbldg. Co.
LAKE GRADAN.....	1093	Philadelphia	1918	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE GRAINGER.....	1093	Norfolk	1919	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE GRAMA.....	1093	New Orleans	1919	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE GRAMPIAN.....	1093	Norfolk	1919	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE GRANBY.....	1093	Orange, Tex.	1919	Chicago, Ill.	Amer. Shipbldg. Co.
LAKE GRANDON.....	1093	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GRATIS.....	1093	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GRATTAN.....	1093	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GRAVELLA.....	1093	Norfolk	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GRAVETT.....	1093	Philadelphia	1918	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GRAVITY.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GREENBIER.....	1093	Philadelphia	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GRETNA.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE GROGAN.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE INABA.....	1093	Norfolk	1919	Lorain, Ohio	Amer. Shipbldg. Co.
LAKE SAVOR.....	1093	Norfolk	1919	Wyandotte, Mich.	Detroit Shipbldg. Co.
LAKE FARLIN.....	1099	Mobile, Ala.	1919	Superior, Wis.	Amer. Shipbldg. Co.
LAKE ANNETTE.....	1143	Norfolk	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE LIDA.....	1143	Norfolk	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE SHAWANO.....	1143	Norfolk	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE PEWAUKEE.....	1143	Norfolk	1918	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE ONTARIO.....	1145	Norfolk	1917	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKEVIEW.....	1145	Norfolk	1917	Manitowoc, Wis.	Manitowoc S. B. Co.
LAKE ALLEN.....	1144	New York	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE CHARLOTTE.....	1144	Norfolk	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE CONESUS.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE CRYSTAL.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE ELIZABETH.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE HARRIS.....	1144	Norfolk	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE HEMLOCK.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKEHURST.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE LOUISE.....	1144	Norfolk	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE MARIE.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE MAUREPAS.....	1144	Norfolk	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE PLEASANT.....	1144	Norfolk	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE ST. CLAIR.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE ST. REGIS.....	1144	Norfolk	1918	Ashtabula, Ohio	Gt. Lakes Eng. Wks.
LAKE SILVER.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.
LAKE WINONA.....	1144	Norfolk	1918	Ecorse, Mich.	Gt. Lakes Eng. Wks.

NOTE:—In Table IV on Page 54 will be found a list of the 50 "Submarine" type boats bought for scrapping.

board of all of the different vessels (and there is room for 10 in line) in varying stages of the process of scrapping. Two heavy-duty plate and scrap shears, and an Alligator shear are installed in the open-hearth building for cutting up steel to charging box size. Another 1000-ton shear of special design to be operated by steam and hydraulic power is now being built for installation in the same building. This shear is designed to crush and cut the double

bottom sections thus obviating the necessity of cutting these sections by torch to plate scrap.

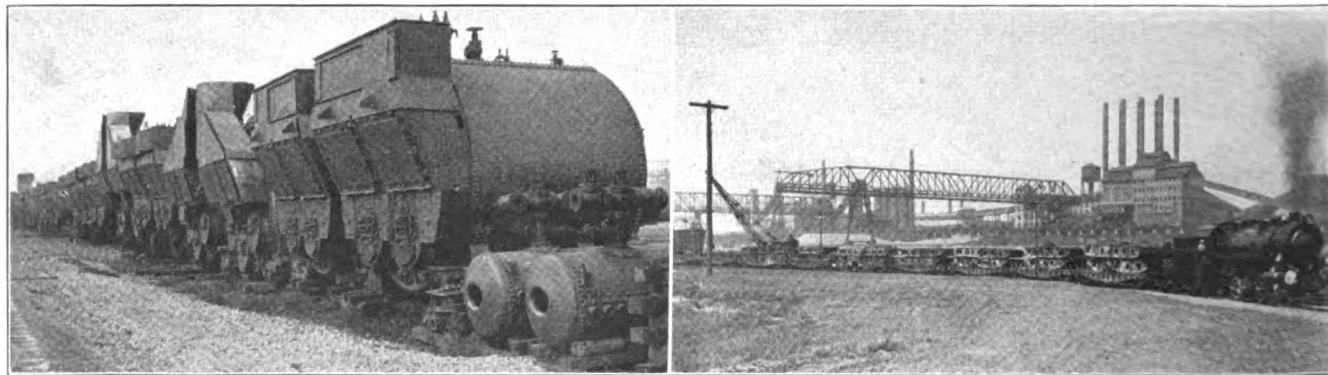
On May 31, when the LAKE ELIZABETH and LAKE FRENCHTON (the first two this year) arrived at the Fordson plant, everything therefore, was practically complete for beginning scrapping in an orderly, systematic and rapid manner. The stage was set and the actors were ready to go on with their various acts. We shall now see how well this program

has progressed up to the present time. The LAKE FONDULAC, the first ship of the fleet arrived at Detroit on Dec. 17, 1925, and after having been thoroughly experimented upon was completely scrapped on June 15, 1926, an elapsed time of 180 days. The LAKE FRENCHTON, arrived May 31, and was completely scrapped June 29, an elapsed time of 29 days. The LAKE ELIZABETH arriving on the same day was completely scrapped July 1, an elapsed time of 31 days. From the beginning of operations this year one vessel was scrapped every two days and later (during September) the time was reduced to three vessels completely scrapped each five working days.

To keep up such a rapid pace in scrapping requires not only the most complete equipment but also systematic and energetic methods of control and supervision. Ten hulls are constantly in process of dismantling on their way for final cutting up in drydock. There is also of course, always the remnant of one hull in drydock for final cutting up.

## Sequence of Operations

The first step before a vessel has been brought into line is the removal of all consumable stores, then the hardware, furniture and other extraneous materials. In the third step all wood such as wooden decks, wooden partitions, ceilings and dunnage is removed from the ship. The ventilators, stacks, masts, etc., are then removed. In the meantime several burners are employed in cutting away superstructure steel. The hulls are moved from time to time along the line, being further and further cut down until finally the engines and boilers are exposed. These are lifted out of the ship bodily over the side which has been cut down so as not to require too high a lift for the powerful wrecking crane which does this job. The boilers and engines, placed on flat



RESULTS OF SHIP SCRAPPING AT FORDSON PLANT, TAKEN AUG. 16, 1926—SOME OF THE SCOTCH BOILERS REMOVED FROM SCRAPPED SHIPS IN STORAGE YARD—AT RIGHT, HAULING TRAIN OF FLAT CARS LOADED WITH SCRAPPED DOUBLE BOTTOM SECTIONS TO STORAGE YARD



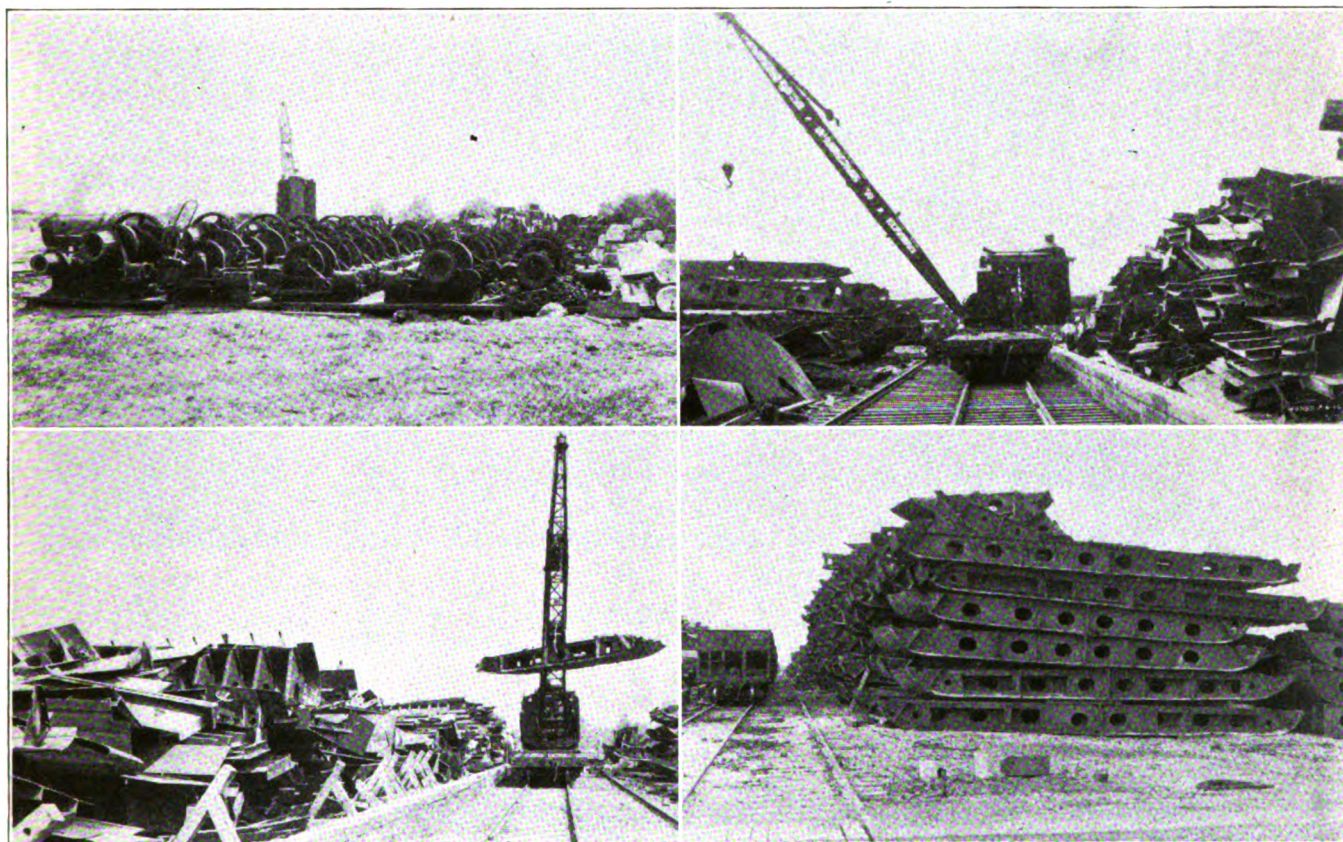
cars, are then removed to storage sectors.

No burner is allowed to cut any part of the ship before it is marked off by a charge man or someone under him. Each ship is a unit in itself and is in charge of one responsible man. There is a boss burner and an assistant who has general supervision of the burning throughout the entire job. One man is in charge of the entire scrapping operation from the point of bringing the ships into line to the delivery of the

six feet in length, the scrap can readily be later reduced to charging box size by shearing.

As the scrap is cut free it is loaded into railroad cars and as these are filled they are switched to the storage yards or the steel mill. Along with the scrapping of the ship goes the unloading of the scrap from its holds brought in as cargo from the Atlantic coast yards. This scrap is unloaded by the gantry cranes into cars and sent to mill or storage. Over a four-day period it has been found

erected at the point where the wood is taken off and all the odds and ends of small salvaged lumber enter this mill by a conveyor along which a number of men remove nails and other metal parts. In this mill the lumber is planed and cut to varying thicknesses and lengths. All of the cork from the refrigerating rooms is reclaimed, and so is asbestos and pipe covering. There is practically no cast iron scrap. Windlasses, winches, steering engines, pumps, dynamos and every bit of auxiliary machinery,



VIEWS OF DIFFERENT SECTIONS OF SCRAP AND SALVAGED MACHINERY STORAGE SECTORS AT THE FORDSON PLANT—THE SCRAP COVERS LARGE AREAS AND REPRESENTS ONLY ABOUT ONE-THIRD OF ALL THE SHIPS TO BE SCRAPPED. LOWER RIGHT SHOWS DOUBLE BOTTOM SECTIONS WHICH ARE TO BE SHEARED TO CHARGING BOX SIZE—THIS VIEW TAKEN AUG. 16, 1926, THE THREE OTHERS WERE TAKEN JULY 6

scrap to the mills or to storage. Steel decks are burned in sections not over 6 feet long fore and aft and the full width of the ship to the sheer strake angles. A burner will cut such a marked section with the exception of a few inches here and there to hold the section in place until the crane is ready, and it is not completely severed until the crane falls have been attached. This prevents the possibility of any accident. By following the rule that no cuts must be made that are not marked and that no sections may be entirely severed until the crane sling is attached the job goes along more quickly and accidents are prevented. By cutting all the large areas not over

that the average crane hours per day of 24 hours, working three shifts, is 70.2 hours for three cranes for unloading the scrap into the yards. There are in all 10 cranes as detailed above working 16 hours per day on the boat scrapping job along the wharf including the powerful locomotive wrecking crane, and three cranes engaged in unloading 24 hours per day. The accompany illustrations show the methods pursued.

#### No Part is Wasted

Every part of the vessel is salvaged in one way or another. Each vessel is stripped of its wood before it comes into line at the scrapping dock. A small saw mill has been

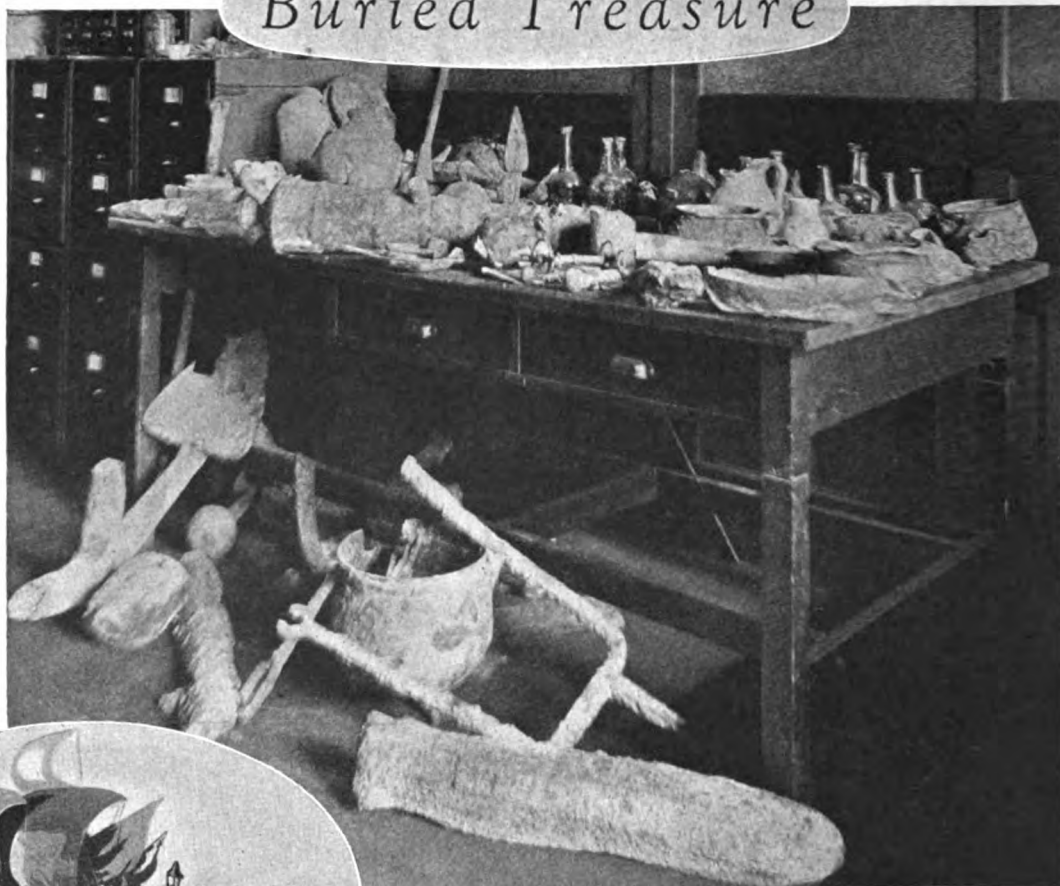
are, like the main engine boilers, saved intact for future disposition. All steel piping is also salvaged for use as pipe. Nonferrous metal scrap, it is said amounts to about 15 tons per ship.

The most interesting use has been made of the main engine unit removed from the LAKE FONDULAC. After a very thorough overhauling and renovating this engine and the two boilers making a complete unit was set up as shown in an accompanying illustration at the Fordson plant. A generator was connected to the engine and it is now possible to generate 1000 kilowatts of power with this unit. It is the intention to overhaul other units in a similar man-

(Continued on Page 54)



## Buried Treasure



## Iron Articles Dug Up; Century Old

A NUMBER of interesting exhibits of the product of the iron industry about the middle of the eighteenth century were unearthed recently by workmen excavating for an addition to the Seamen's Church Institute building at South street and Coenties Slip, New York. In the days when New York was Nieu Amsterdam, a Dutchman by the name of Couraet Ten Eyck, familiarly known as Conraetje or Coentje, had his home and shop there and his name came to be given to the little pier which jutted out into the East river. The ground on which the building work is being done was filled in between 1791 and 1803. Thus the excavating has been done in ground which was a part of the bed of New York harbor up to the end of the eighteenth century, and which, as such, was the graveyard for all kinds of odds and ends that fell off or were cast off the ships.

Several pigs of iron only slightly affected by oxidation are prominent among the objects dug up. One of these pigs distinctly bears the letters

"N. York 1752", as well as the figure of an anchor. The lettering on the others cannot be clearly deciphered. Two interesting chunks of iron look like crops from forging bars. These are interesting chiefly because of the remarkable success with which they have withstood corrosion. An old axe, of the kind that was imported in large number from Holland in the Seventeenth century to be traded to the Indians for beaver skins, appears to have been converted almost entirely into oxide.

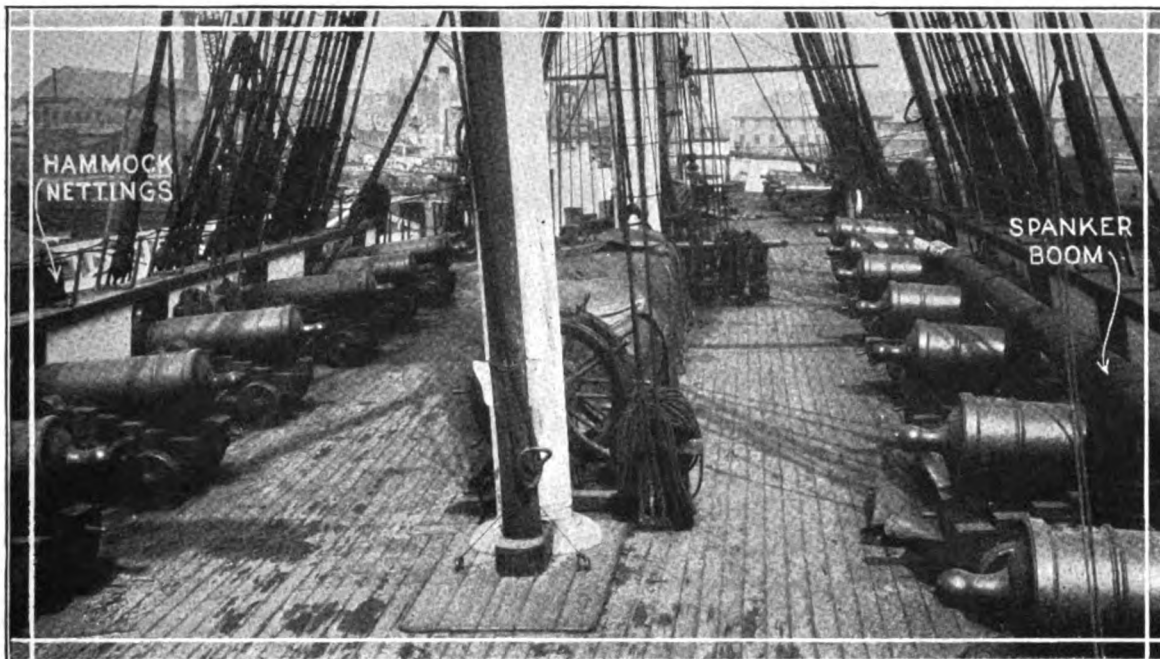
Most conspicuous of the objects found is a small cast iron cannon, three feet long, with 2½-inch bore, which has been wonderfully preserved. It is believed to have been one of three guns which formed a battery at the landing at Coenties Slip in 1679. There is a double-ended "bar shot" 16 inches long, used by the British navy against the rigging of many war vessels, and liberally used against the American forces defending New York.

This is a bar of wrought iron with a cast iron ball at each end. A number of solid shot about 6 inches in diameter and a number of grape shot also were found.

Reginald Pelham Bolton, of the New York Historical society, regards these as the "mute evidence of the bombardment of New York city on the afternoon of Saturday, July 12, 1776, by the British vessels PHOENIX and ROSE with their tenders".

The collection includes a big cast iron pot which was used for cooking. This is in good condition. There are some other castings and wrought iron articles, such as anchors and parts of anchors. The striking feature of the whole exhibit is the way in which this old cast iron and wrought iron has withstood the ravages of corrosion, despite the fact that it has been buried in the earth over a century and a quarter, as well as having been immersed in the waters of New York

(Continued on Page 52)



The U. S. S. Constitution—General view of the spar deck looking from aft. The spanker boom temporarily unshipped is not in its customary position. The hammock nettings are for stowage of the crew's hammocks during daytime

# Guns & Gunnery, Old Ironsides-I.

Historical Research on the Oldest Ship of the Navy  
—Interesting Facts on Her Cannons and Equipment

BY ELLIOT SNOW

Rear Admiral (C. C.) U. S. N., Retired

FATHER TIME, without man's aid, bids fair to accomplish what no antagonist, with deadly intent, ever did to OLD IRONSIDES—lay her low! Look at the gaping holes in her sides; the skill of shipwrights only can make her well again! Stoically, without a groan or whimper, "the Nestor of our navy" waits patiently for the succor that is so slow in coming.

A short prescription by congress, and a soft berth for a brief while in dock, will rejuvenate the "veteran of our navy." One short clause inserted in the naval appropriation bill, waiving the statutory limit placed on the repair of wooden vessels, with an added mandatory clause for the requisite expenditure, will insure to the CONSTITUTION another long lease of life. It cannot be that the elders of the United States have less patriotism today than their children, or less than their forefathers in the days when the CONSTITUTION, young and vigorous, like a damsel in young womanhood was "looking for engagements."

General George Washington did not

This is part 1 of the article on the Guns and Gunnery of Old Ironsides. Part 2 will be published in an early issue.

hoard dollars when lives and ships were in danger from Barbary corsairs, and now when OLD IRONSIDES is attacked by that invisible foe, Father

## Ship Mindedness

To the Editor

*I understand thoroughly that the principal mission and purpose of the MARINE REVIEW is that of promoting a merchant marine and of building up material and information which will help in this aim. Taking a very broad view of the accomplishment of this mission, it seems to me that any thing which tends to inculcate "ship mindedness" in the people of the United States must of necessity redound to the upbuilding of our merchant marine.*

*The fact that in the very early days of the United States as a nation, many of its most prominent officers and principally all of its seamen were drawn from the merchant marine, seems to me to indicate that an interest in OLD IRONSIDES will but reflect a deep interest in the merchant marine.*

Elliot Snow

Rear Admiral (C. C.) U. S. N.  
Retired

Time, is she to be left in the lurch! Is this nation of ours so wedded to its dollars, dimes and nickels that sufficient "golden eagles" are not to be forthcoming to restore again this historic old vessel! Shall the flag of the CONSTITUTION be lowered and burned to avoid the rag bag (a fate which befalls all bunting except national colors); her rigging, sold and picked to shreds by the junkman and used for calking the decks of common craft; her spars and scarred sides, sawed into chunks or chopped to bits with a landsman's axe and burned on the dump? Far better would it be, to use the timber of OLD IRONSIDES to warm the hearths of sailors havens. Are her guns to be broken, by a falling shapeless weight, loosed by the hand of a mere boy, and then serve as ballast in the dark hold of some old derrick? Let our answer come back in thunderous peal "NO!"

OLD IRONSIDES, cannons oft have spoken in defense of the freedom of the seas, of the land of our great grandsires—Yes, in the very defense of the constitution itself. Had she not thus breathed forth, in righteous wrath, her fiery words of rebuke could we hold our heads as high to-



day as we do—and ever should? She bears no ancient grudge against the "Lion" that clawed the "Cub" in 1812. Rather does she now regard that incident as but a family affair, one that disclosed her strength and showed the ultimate good that flows from pursuing, peacefully common Anglo-Saxon ideals. Read history aright: If an outsider menaces the United States, note the ominous twitching of the "Lions" tail, and the direction of the flare of her nose. The CONSTITUTION's cannons spoke in protest only. When they did, all the world hearkened to what she had to say; the language she spoke was universal—everlasting; understood today, as it was a century ago and will be a thousand years hence.

"Behold, the former things will come to pass" is the comforting message vouchsafed to us in the ages long past. We should all therefore take heart and believe that "history will repeat itself" and that before many more years have run their course, OLD IRONSIDES will again have partaken of the elixir of life as she did in 1906-7. This elixir was but a draft on the treasury of the United States in amount sufficient to restore her "as far as may be practicable, to her original condition but not for active service." Thanks to the generosity of the school children of America, another draught administered by the hand of congress may not be needed. If it is, then let it be forthcoming in ungrudging measure.

The sixty-eighth congress passed an act, approved March 4, 1925, authorizing the restoration of this vessel but without appropriating any money for the purpose. It carried, however,

this proviso:

"That the secretary of the navy is further authorized to accept and use any donations or contributions, which may be offered for the aforesaid purpose."

On Feb. 14 1900, there was an analogous enactment, by which funds

### Concerning the Author

*The contributor of the article "Guns and Gunnery, Old Ironsides," Rear Admiral Elliot Snow, construction corps, United States navy, retired, was until his recent retirement one of the high ranking officers of that corps. In 1906-7 he was very closely identified with the restoration of the U. S. S. CONSTITUTION, as carried out under a provision enacted by the first session of the fifty-ninth congress. The statutory restriction against using funds appropriated for work, under the appropriation "construction and repair" for repairs to wooden vessels amounting to more than 10 per cent of the cost of a new vessel was at that time waived in the case of the CONSTITUTION. A provision was also included that directed \$100,000 or such part of that sum as might be required, "shall be used to repair, equip and restore the frigate CONSTITUTION, as far as may be practicable, to her original condition but not for active service."*

*What Admiral Snow says in this article is taken partly from his personal files, partly from the archives of the navy department, and is technically accurate.*

were to be raised through the agency of the Massachusetts state society, United States Daughters of 1812. After a lapse of some five years,

congress yielded to public opinion and issued a mandate to the bureau of construction and repair (appropriation act of 1905-6) "to expend \$100,000, or such portion thereof as may be necessary to repair the CONSTITUTION but not for active service."

An evidence of the widespread, growing interest in the coming restoration of the historic frigate came from Duluth, Minn. It took the form of a letter, addressed to the *Scientific American*, and dealt with the battery of that vessel.

The correspondent failed to include his address, thus rendered it impossible to communicate with him. It seemed wise therefore to place before the editor of the *Scientific American* some first-hand information bearing upon the history of the restoration of OLD IRONSIDES, in 1906-7. Accordingly a letter was sent to the editor and with it was enclosed the following statement:

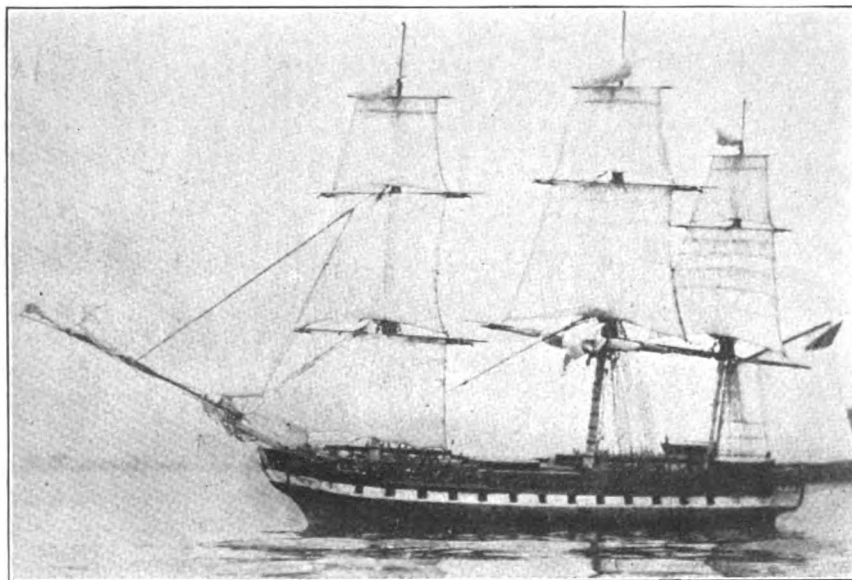
"It is to be hoped that the funds and the information as to the details of the battery the CONSTITUTION carried in 1812 will both be available. If your correspondent can and will write to me or the commandant of the navy yard, Boston, and tell us where to find the information upon which to reproduce the battery he will have served his country well—better perhaps, from an historic standpoint than he realizes.

The estimates upon which the appropriation of \$100,000 was made for the restoration work of 1906 were asked for by telegraph and were similarly submitted within 24 or 48 hours from the receipt of the order, because the naval appropriation bill was then in the final stages of conference and there was no time to be lost. The funds voted were thus based upon a necessarily quick snap judgment guess only, and as it proved were not sufficient to permit of too great nicety in their expenditure for detailed differences in the battery. Upon closing the accounts at the end of the fiscal year, the expenditures amounted to somewhere in the neighborhood of \$99,996.

The affairs of the navy have not always been in the hands of an executive department bearing that name. When the CONSTITUTION was building and first equipped, the affairs of the navy were in the hands of the war office then administered by Timothy Pickering. Her guns were English built, borrowed from the Commonwealth of Massachusetts, some were smaller in size than she carried in 1812.

The lack of original documents wherewith to settle obscure details of OLD IRONSIDES, cannons (as guns were called in her day), is due to the loss of these papers by fire. The original records of the navy were burned in 1800. Fortunately the

(Continued on Page 60)



MODEL OF THE U. S. S. CONSTITUTION LEAVING PORT 1922—A SAILING MODEL MADE BY COL. WILLIAM F. SPICER, UNITED STATES MARINE CORPS. A VIEW TAKEN ACTUALLY SAILING

# Build Naval Reserve from Merchant Marine

BY REAR ADMIRAL W. R. SHOEMAKER

ONE of the most valuable assets in naval preparedness is the merchant marine naval reserve. The naval reserve act, which became effective July, 1, 1925, provided for this important part of our naval organization and regulations for its formation were approved by the secretary of the navy. For various reasons, the principal one being the inertia to be overcome in inaugurating any new government activity in these days of restricted budgets, no progress has been made in the actual accomplishment of this project, other than the making of certain plans to develop this great potential asset, as soon as the necessary funds are made available. Its obvious interest to the shipping companies and the personnel of the merchant marine warrants a brief exposition of what the merchant marine naval reserve may be expected to accomplish for the navy in war and for the merchant marine itself during peace time.

This form of the naval reserve as regards officer personnel has many advantages over other classes. In the first place, its personnel, even before commissioned in the reserve, has a great amount of sea training which

in general compares favorably with that of regular officers. This, therefore, greatly simplifies their reserve training, which may be limited to distinctly naval subjects in which the merchant marine officer does not obtain experience under peace conditions, and the lack of which required many anxious months to overcome when this class of officers were requisitioned for naval service during the World war. In the second place, the merchant marine officer continues serving at sea almost constantly and this keeps him trained to the minute in the operation of his ship under peace conditions and facilitates his training in distinctly naval subjects.

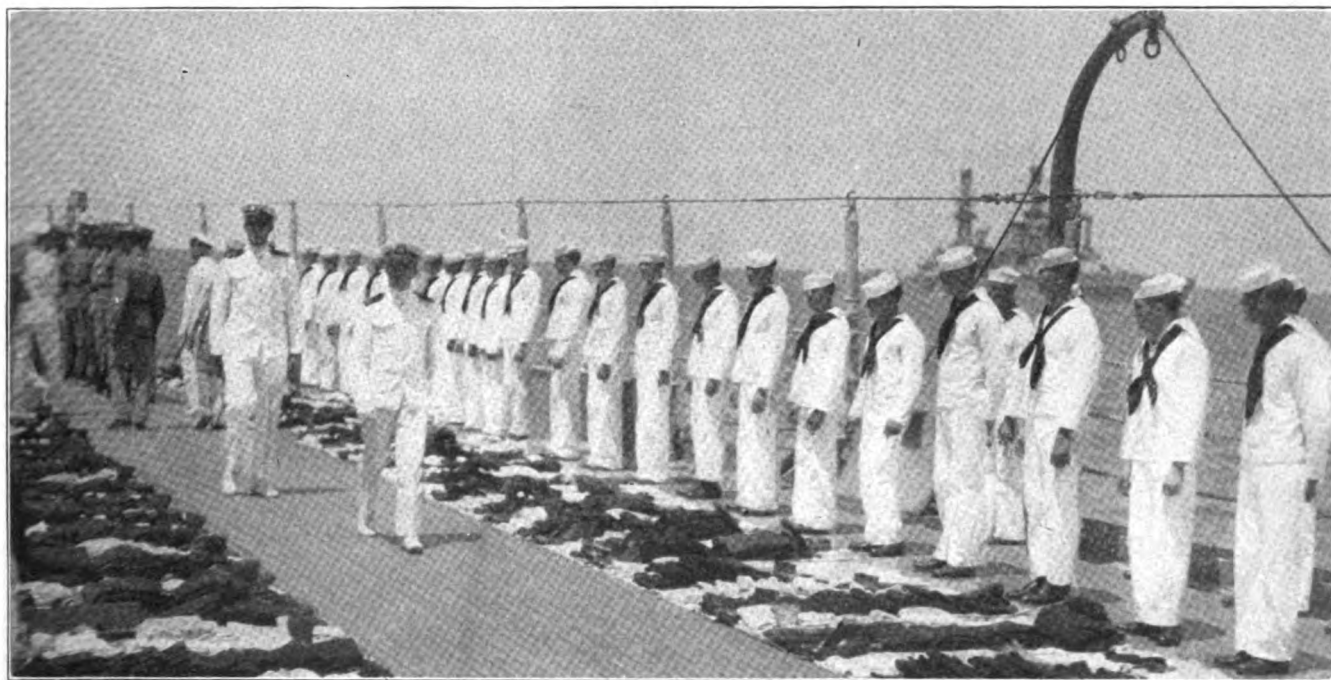
## Must Train Organizations

A principle which has been followed in all classes of the reserve is that we must train organizations, not individuals. It is a simple matter in peacetime to list a number of officers and men, but to give both peacetime training and to provide wartime efficiency it is necessary that individuals be grouped into organizations and the closer and firmer these organizations are cemented during peacetime the more effective they will be under the

strain of war. In the merchant marine, by taking the ship as a unit, and commissioning the master and other officers in the reserve we have a living operating organization already formed for us, which would be of great potential war value. If the ship should be chartered by the navy and operated with a merchant crew the officers would not be called to active service, but, due to their naval reserve experience, would be able to operate with the fleet more effectively than if its officers had merchant service experience only. If the vessel in which they were serving should be commissioned and manned by the navy, they would remain on board and constitute the nucleus of its officer personnel.

The fact that the merchant marine officers would continue on their own vessel and in most cases perform the same duties would be of immense advantage at mobilization and, in fact would be indispensable for its proper operation, particularly as its services would be required on very short notice.

The foregoing concerns the officer personnel only. The enlisted personnel (Continued on Page 58)



THE HEALTH OF THE MEN OF THE NAVY IS OF FIRST CONSIDERATION—FREQUENT PHYSICAL EXAMINATIONS, BEDDING INSPECTION AND EXERCISE ARE A PART OF REGULAR ROUTINE. THIS VIEW SHOWS A DIVISION OF MEN LINED UP ON THE DECK OF A BATTLESHIP FOR BAG INSPECTION



# From the Old Log Book

Stray Items About the Great Lakes, Atlantic, Pacific and Gulf Coasts and Inland Rivers from MARINE REVIEW Files of 10, 20, 30 and 42 Years Ago

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OCTOBER 1884

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IN THE *Marine Record*, then the name of *MARINE REVIEW* and a weekly, for Oct. 2, 1884, it was noted that word had been received from Washington, by local steamboat inspectors on the Great Lakes, that an assistant inspector had been appointed to examine and pass upon all life saving apparatus and life preservers and to brand them at the manufacturers before they could be used on the boats.

\* \* \*

IN VIEW of the large modern fleet of lake freighters now owned by Pickands & Mather Co. it is interesting to recall that the H. S. Pickands built by Captain Kirby, at Grand Haven, Michigan was launched on Oct. 8, 1884 and Colonel Sylvester Larned of Detroit delivered an able address.

The Pickands of that day was a three masted full rigged ship with a carrying capacity of 1200 tons and her cost was \$70,000. Some of the details of construction are interesting; length overall 200 feet; length of keel 175 feet; beam 32 feet; depth of hold 14½ feet. The frames were white oak, got out of 6 x 7-inch fletch. On the keel the depth of the frames were 17 inches, at the bilge 15½ inches, and at the top 7½ inches. Her main keelson was 16 x 16 inches and there were two sister keelsons 16 x 16 inches; two rider keelsons 12 x 14 inches and four floor keelsons 14 x 16 inches. The ceiling was of 6 inches and her planking was four inches. A belt of iron 1½ inches and 8 inches wide was laid under the sheer strake. She was built for the grain and coal trade between Chicago and Buffalo, and the iron ore trade between Escanaba and Fruitport.

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OCTOBER 1896

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THIRTY years ago the *MARINE REVIEW* mentioned the launching of the big steel steamer JOHN ENGLIS, at Roach's shipyard, Chester, Pa. The JOHN ENGLIS was built for the Main Steamship Co. for use in the

freight and passenger service between New York and Portland. She was to have 126 staterooms for passengers and a freight capacity of 2000 tons. Her speed was to be 18½ miles an hour in service. Her length was 213 feet and the beam was 46 feet. Power consisted of one triple expansion engine with cylinders 30, 48 and 75 inches in diameter and 56 inches stroke. The steam plant consisted of six boilers carrying a working pressure of 180 pounds. A total horsepower in excess of 4000 was expected.

\* \* \*

*SPEED for boats is not of so recent an origin as one would be inclined to think. Thirty years ago the MARINE REVIEW published some interesting facts concerning the steam yacht MARIETTA.*

\* \* \*

HER dimensions were 143 feet overall, 16 feet beam and 9 feet 11 inches depth of hold. Accurate records of speed, in trying different propeller wheels, were kept on a course between a buoy off Larchmont and one at Glen Cove, Long Island, N. Y., a distance of a little over two miles. With the last wheel tried the vessel averaged 19.88 miles with 180 pounds of steam and natural draft. This was a speed she could maintain for any distance. Her engine had cylinders 12, 18 and two 22 inches by 15 inches stroke, turning 300 revolutions at 200 pounds steam.

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OCTOBER 1906

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UNDER the heading of "Mariners Creed," the following excellent advice for seafaring men was published in *MARINE REVIEW* twenty years ago:

*I BELIEVE in the lead, as it guards me against dangers which the eye can not see. I believe in the lookout, as it guards me against dangers to be seen. I believe in the log, as it checks my distance run. I believe in ascertaining the latitude, as it helps me to define my position. The lead guards me against dangers invisible, the lookout guards me against dangers visible. The log guards me against false distances and the latitude helps me to define my position.*

THE above is an excellent creed for all mariners. Scientific development of aids to navigation within the last 20 years, particularly, for instance, the newly developed automatic depth finder working on the sound and echo principle, will help to observe this creed.

The depth finder has been very thoroughly tried out and will do with rapidity and accuracy what is done slowly and laborously with the lead. The lead however, will never disappear as the elemental basic check. Adherence to a policy of eternal vigilance in safeguarding the ship against its seen and unseen dangers would prevent many accidents.

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OCTOBER 1916

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AN INTERESTING account is given of the Canadian government ice breaker J. D. HAZEN, in the October, 1916 number of *MARINE REVIEW*. The vessel measured 290 feet long overall; 275 feet between perpendiculars, 57 feet 5 inches beam, 32 feet molded depth. A designed draft of 19 feet 3 inches, gave a deadweight of 950 tons. The vessel was fitted with two powerful reciprocating engines, developing a total of 8000 horsepower. The stem a massive steel casting raked aft.

\* \* \*

THE war had begun to make its effect felt. All the neutral countries of Europe had begun to produce ships at maximum capacity. Yards in Holland had work in hand for 5 years ahead and similar conditions existed in Scandinavian yards. Even Spanish shipbuilding took a remarkable turn for the better and a new shipyard was laid down at Bilbao.

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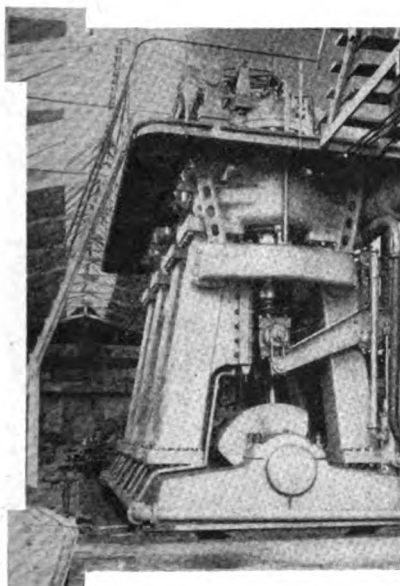
IT IS strange in the view of subsequent happenings to read of the evident friendly reception extended the German submarine Deutschland on her trip to the United States in 1916. This visit was evidently considered an honor, for the city of Baltimore received the German officers and crew with elaborate receptions and there was very evident relief shown when news came that the submarine had returned safely to Germany.

# Latest Marine News in Pictures



Long Point lighthouse, Lake Erie. Fog station, storm signal mast and wind velocity outfit. The old lighthouse is shown in the background at left of storm signal mast.

Galley on the Coamo of the New York and Porto Rico Line. Soup strainer and utility devise, and ice cream freezer electric motor driven. Electric oven. All of Westinghouse Electric Mfg. Co.

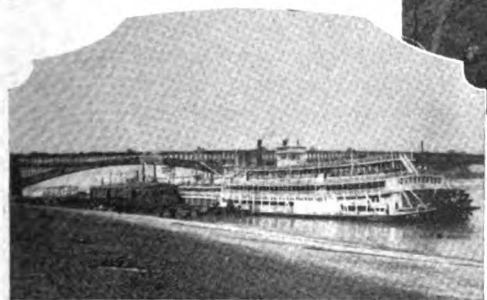


A Swedish Nobel diesel marine engine. Develops 1600 horse-power at 105 r. p. m. Length 25 feet, width 12 feet and height from center of shaft to top of valves 19 feet. Total weight 160 tons.



Changing propellers on the S. S. Leviathan during her mid-summer overhauling in the Commonwealth drydock, Boston.

This view taken some time ago, shows the famous levee along the Mississippi river at St. Louis. It is a gently sloping, heavily stone-paved bank. The passenger boat is the Majestic.



Training merchant marine sailors in Germany to turn out really handy men.

A high seas roll call crew boards a battle ship to enlist the men in the American Red Cross.





# Dock Management Progress Section

How Successful Dock Operators Have Met  
Problems of Giving Best Service to Ships

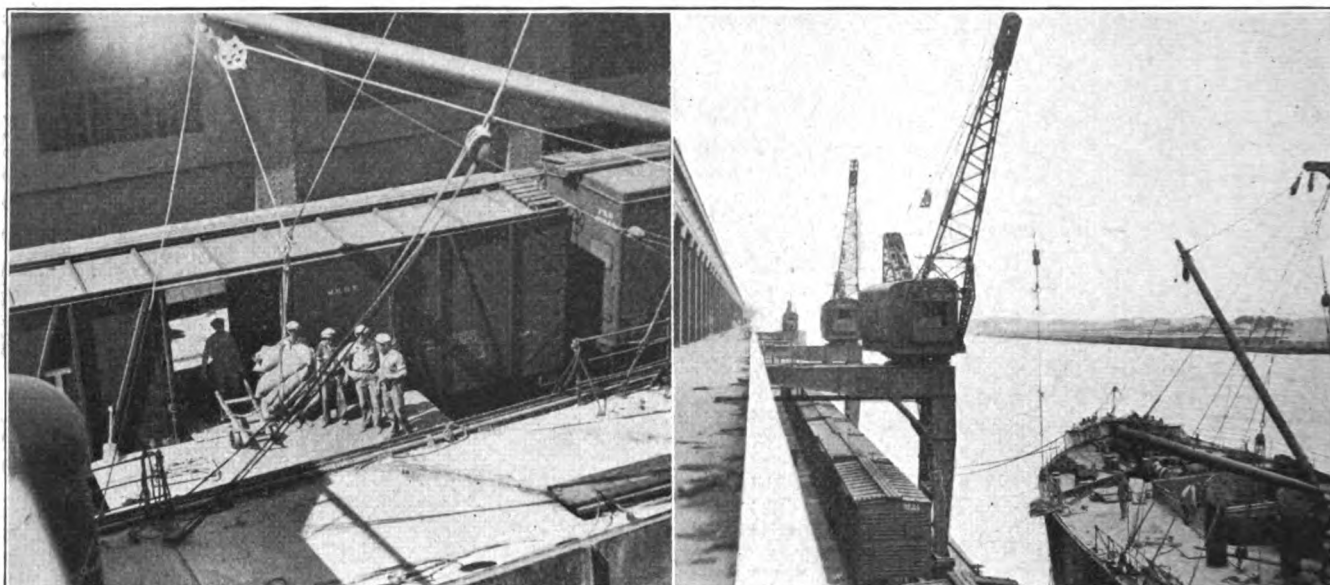


FIG. 1 Loading cement direct from ship to cars at the Tidewater Terminal pier in Boston—The ship's tackle alone being used—Fig 2 (at right) When the pier equipment is used in conjunction with the ship's tackle the bags of cement can be landed on the second floor pier apron upon trailer for transfer to storage within the shed

## Gets Cement Cargoes by Low Handling Costs

BY H. R. SIMONDS

SO RAPIDLY have new commodities followed one another as regular traffic at the Boston Tidewater Terminal pier, formerly known as the army base pier, that few Bostonians, let alone those interested in shipping in other parts of the country, realize the present variety and the wide geographical territory of their origin. From northern Europe alone come pig iron, wool, wood pulp, leather, steel, toys, glass, chalk, potash and cement. The last item on this list is now arriving in quantities little dreamed of even a few years ago, and fortunately the facilities for handling cement are about as favorable as if the pier had been designed especially for this commodity.

Cement is a low priced commodity and it is essential that the combined dock charges per sack be low, otherwise the dealers cannot meet competition. In order to make cement

handling profitable as a dock proposition the turnover must be rapid and the volume great. At present the cement in storage at the Tidewater Terminal pier averages 300,000 bags with a turnover of about once a month.

### Low Cost of Handling

When an order comes through calling for direct shipment by rail, the cement sacks from the vessel's hold are swung out with the ship's tackle on hand trucks standing on platforms at the entrance of the waiting freight cars as shown in Fig. 1.

From here the sacks are wheeled and piled directly in the cars. The cost of handling cement by this method direct to cars runs as low as 1.20 cents per sack. When the cement is to be stored on the upper floor of the warehouse, the pier cranes, of which there are four of 2¼-ton capacity, besides

numerous smaller ones, are used. These cranes are shown in Fig 2. The usual scheme is to swing the cement up from the hold on the deck of the vessel in slings each holding twelve bags. These slings are picked up by the pier crane and then swung on small trucks or industrial trailers operating on the second balcony which extends 10 or 12 feet beyond the shed. These trucks or trailer trains as the case may be, then transport the bags to the storage space within the warehouse. The cost of handling by this method from hold of vessel to storage pile averages about 4.00 cents a sack. The average cost from storage to truck is 2.00 cents a sack, making the total cost from hold to truck, not including storage charges, 6.00 cents a sack or \$1.20 a ton.

With the pier already busy throughout its length with the handling of

other freight, it has been possible to add the movement of thousands of tons of cement a month through the property without in any way interfering with the established traffic. This has been done by using space in the vast second floor area of the pier sheds and by transporting the sacks to and from this space entirely from the outside of the shed. The sacks are stored on the concrete floor in piles nine sacks deep as shown in Fig. 3. Most of the cement is taken from the pier by motor trucks, and to facilitate loading zinc lined chutes have been built. One of these is shown in Fig. 4. Holes cut through the outer concrete wall of the shed enable the sacks of cement to be placed on the upper end of the chute. The sacks are carried close to the holes on raised platforms so that gravity takes care of most of the work of feeding them on the chute. Loading by this method is simple and inexpensive with the added advantage that trucks wait at a point on the pier remote from the regular channels of freight movement.

#### Cement Trade of Recent Origin

To date nearly 50,000 tons of cement have been handled at the pier since this traffic was started in the fall of 1925, and at present vessels carrying cement are docking regularly at the pier. The whole procedure is systematic and business-like. The piles of sacks in storage are labelled with the names of the consignees. Record is kept of name of vessel and date of arrival, and any ordinary amount of breakage is taken care of on the regular pier charges which cover the first month's storage. A

six-day free period is allowed from the time the boat is docked. After this period and the thirty days of the first month have elapsed, the regular month to month charge for storage is greatly reduced.

As soon as the first cargo of cement was unloaded at the pier last year, increased interest in the pier was apparent among building materials dealers of Boston, and this interest has grown until at present several of these dealers are utilizing part of the pier space. The cement business is to a large extent a business of handling material. The cement is purchased at a certain price already sacked at the plant of the manufacturer. From this point costs accumulate due to the problem of transporting the sack from its point of origin, which may be in Belgium, to its destination, which may be the new Statler hotel in Boston. First there is the handling charge on the boat, then the freight paid to the steamship company, then the insurance, the duty into America, the overboard charge, the cost of placing in storage, the storage department, cost of loading in trucks, and finally the trucking charge. On top of all this comes operating expenses, loss due to shortage and shrinkage, expense of resacking, beside general overhead items. It is usual practice for shippers in foreign countries to load from  $\frac{1}{2}$  to 1 per cent overcount to make up for loss in transit.

#### Resacking and Reclaiming

The docking problem in connection with handling cement is largely one of providing ample sheltered space with a smooth floor, strong enough

to hold the dead weight of close piled cement. At the Tidewater Terminal pier the concrete floors have been designed to safely carry 400 pounds per square foot. In addition to storage and handling, space must be provided for resacking and for empty sack reclaiming and handling. It is common practice of cement dealers to charge customers ten cents a sack on top of the charge for cement, and then to allow a refund of ten cents a sack when they are returned. These empty sacks are returned dusty with cement and dirt and otherwise in poor shape. Many foreign sacks, particularly those from Norway, are thick and heavy and retain within the material a large amount of cement which in many cases is still usable, if it can be separated from the bagging. Sack cleaners have been designed to take care of this separation. Bundles of the returned bags are dumped into such a machine where by a combination of centrifugal and oscillating action the dirt and cement is removed and falls to the bottom of the machine.

#### Special Tools Used

One of the cement dealers at the pier has devised an ingenious scheme for screening the cement out of the mixture of dirt and cement secured from the bags. He has taken the crankshaft and flywheel of a light automobile and mounted this with two of the piston rods fastened rigidly to one end of a screen frame. The other and lower end of this frame is left free to slide over a support. A small motor belted to the fly wheel rotates the crankshaft and thus im-

(Continued on Page 62)

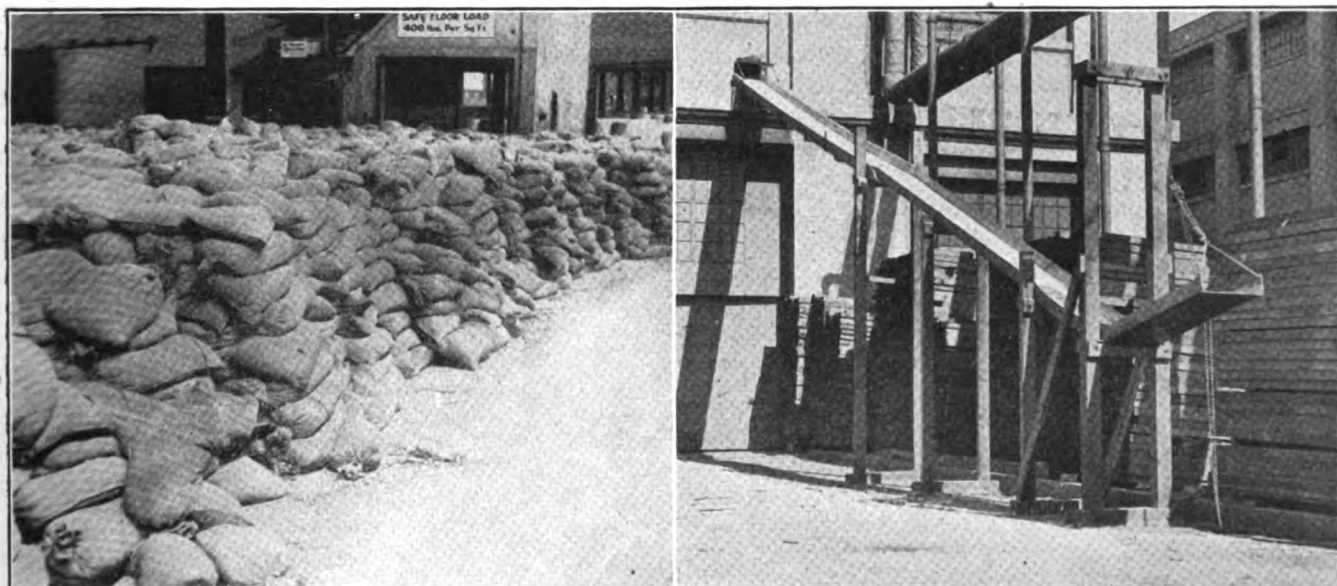


FIG. 3 THE SECOND FLOOR OF THE PIER MAKES A CONVENIENT STORAGE SPACE FOR CEMENT—ABOUT 300,000 BAGS ARE CONSTANTLY ON HAND—FIG. 4 (AT RIGHT) SHOWS ONE OF THE ZINC LINED CHUTES FOR QUICK LOADING OF TRUCKS FROM STORAGE AT A COST OF LESS THAN 2.00 CENTS PER BAG



# Personal Sketches of Marine Men

Amos S. Hebble, Superintending Engineer, Southern Pacific Steamship Lines

By E. C. Kreutzberg



*HE HAS the courage of his convictions and will not give up if he thinks he is right.*

*HIS responsibilities are great but he is prepared to meet them with originality and good sense.*

*ALWAYS courteous and calm, he has the full confidence of his superiors and subordinates.*

**A**MOS SHERMAN HEBBLE for many years has been recognized as one of the outstanding figures in the field of marine engineering and ship design. As superintending engineer of the Southern Pacific Steamship lines, he is responsible for the design, construction and physical condition of the entire fleet. Inasmuch as this fleet comprises 25 ships and some 75 harbor craft, it at once becomes apparent that this is no ordinary task. As a naval architect he has won renown for his fearlessness in making departures from standard practice. His latest exploit is the design of a Southern Pacific express liner, now under construction by the Federal Shipbuilding Co. at Kearny, N. J. This ship will have a steam boiler pressure of 350 pounds per square inch and 200 degrees of superheat, which is 100 pounds in excess of any pressure previously employed in marine power plants.

From Mr. Hebble's start in life it would never have been suspected that he would develop into one of the country's foremost marine engineers. He was born in Gloucester county, Virginia. His father was a native of Lancaster, Pa., who had moved to Virginia, married there and set up a 2700-acre stock farm. While Amos was still an infant, his folks moved to Lancaster. When he was seven, the family moved back to Virginia. It was at that time that the boy first developed an interest in steam engines. Among his father's interests was a saw-mill and young Amos used to like to watch the machinery at work. The power unit was a 10 x 12-inch, horizontal, center-crank engine, mounted directly on the boiler, the whole unit placed on wheels so as to be portable. Under the tutelage of his father, who was a man of considerable mechanical ability, the boy was able to

get pretty well grounded in the workings of this engine.

The family moved to Baltimore when Amos was 12, and it was in that city that he received his schooling. After finishing his education, he went to work in a machine shop in Baltimore. But he felt the lure of the sea and at the age of 20 went with the Baltimore & Washington Steamboat Co. which operated the NORFOLK and the WASHINGTON, since rechristened the LEXINGTON and the CONCORD. The following year he went with the Bay Line, plying between Norfolk and Baltimore. With this preliminary experience he was ambitious to move up a peg. At the age of 22, he came to New York and shipped as an oiler on the steamer EL PASO of the Southern Pacific Co.—Atlantic Steamship lines, now known as the Southern Pacific Steamship lines. Mr. Hebble served as an oiler for only a few months. He served in various capacities as assistant engineer and then was made a chief engineer and served in that capacity on several Southern Pacific ships. In 1905 he was appointed assistant superintending engineer, with headquarters in New York. In 1907 he was appointed superintending engineer, the post which he continues to occupy. In July, 1926, therefore, Mr. Hebble rounded out his thirty-first year in the marine business, a continuous service of 29 years with the Southern Pacific, and his nineteenth year as superintending engineer.

Mr. Hebble has designed and superintended the construction of the following boats for the Southern Pacific Steamship lines: EL SOL, EL MUNDO, EL ORIENTE, EL OCCIDENTE, TOPILA, TORRES, EL CAPITAN, EL ALMIRANTE, EL ISLEO, EL LAGO, EL ESTERO and the TAMIAHUA, EL COSTON, EL OCEANO, as well as the new vessel now under construction at Kearny.





## *The Columbian Tape-Marker*

# *Rope that Is Rope*

You may sometimes hear the expression, "Oh—Rope is Rope," just like "Pigs is Pigs", meaning that all rope is similar.

Almost all rope does look alike until you begin to examine it closely. Then you can tell the difference between Guaranteed Columbian Rope and ordinary rope. You can see that an excellent grade of fibre is used, which is purchased by own own fibre men in the Philippines. You can see the result of the fact that Columbian Rope is made in the most modern Cordage Mill in the world. The even yarns and the perfect lay reflect all that is modern in Rope making.

Take a few coils aboard and compare a Columbian *Tape-Marked* line with any other line you may have. You will then know why many ship operators, who insist upon value received, demand Columbian, the kind containing the red, white and blue *Tape-Marker*.



## Columbian Rope Company

322-90 Genesee Street

Auburn, "The Cordage City" N. Y.

Branches: New York Chicago Boston New Orleans



Please mention MARINE REVIEW when writing to Advertisers



Mr. Hebble's career has been marked by many revolutionary changes in ship design. He was responsible for the introduction of water-tube boilers on coastwise ships. He first made application of both superheat and high pressures on coastwise craft. The attention given by Mr. Hebble to promoting the efficiency of propulsive machinery, and to installing the most efficient cargo handling apparatus have resulted in cutting the operating costs of a large number of coastwise freighters in half during the past 15 years. In recent years Mr. Hebble has given special attention to the fireproofing of vessels. He believes the new ship now under construction at Kearny will be the most nearly fireproof in the world.

During the war, Mr. Hebble served as federal superintending engineer of the Southern Pacific Co.—Atlantic Steamship lines, the Savannah lines, Old Dominion line, Southern Steamship Co., Clyde line, Mallory line, and Merchant & Miners Transportation Co., while these lines were under federal control. At the same time he acted as special expert to the United States shipping board. He also served on a special government committee appointed to consider the subject of manning the merchant marine. He was for some years a member of the main committee of the American Steamship Owners' association and also of a sub-committee to establish wages and

working conditions for all mariners on American vessels. He spent three months abroad in 1923 making a study of the diesel engine for marine propulsion. For a time he was a member of the committee on engineering of the American Bureau of shipping. For years he has been an active member of the Society of Naval Architects and Marine Engineers.

"The fellow who thinks and does the thing that the other fellow does not think and does not do is the fellow who is going to get ahead," is the way Mr. Hebble defines his attitude toward the possibilities for young men in the marine engineering field. There are great opportunities for rendering service that will enable owners to cope with the competitive conditions prevailing in the ocean transportation business. He believes that a young man who is willing to work with an intelligence and sincerity of purpose which goes beyond the mere job in hand, can work out a bright career in the marine engineering field.

Mr. Hebble makes his residence in New York city. He firmly believes in keeping physically fit. He takes regular daily exercise and spends his leisure time motor-ing and playing golf. He is a member of the Grassy Sprain Golf club in Westchester county. He never loses an opportunity to go fishing.

## Marine Men Inspect the Port of Boston

**N**EARLY 350 representative business and marine men gathered at Boston recently for an inspection trip of the harbor conducted by the Maritime associa-

tion of the Boston chamber of commerce. Gen. A. C. Dalton, president of the United States Shipping Board Emergency Fleet Corp., speaking at the dinner fol-

lowing the trip said that Boston and New England were not getting their fair share of trade allocations. He said he thought it possible that the shipping board would establish regular service between Boston and Brazil.

Frank S. Davis of the Maritime association pointed out the places of interest on the trip, which started from Rowes wharf and proceeded to Nantasket. At the Charlestown navy yard, the boat stopped for a few moments, while Rear Admiral Philip Andrews gave a brief description of the various ships in the dock. From there the steamer proceeded up the Mystic river through the Chelsea drawbridge, and then returned to the Boston water front. The boat then crossed the harbor to Dorchester bay where stress was laid on the desirability of dredging a 30-foot ship channel to open up that section of the harbor.

The last visit before reaching Nantasket Beach for dinner was the Fore River shipyard of the Bethlehem Steel Corp. at Weymouth, Mass.

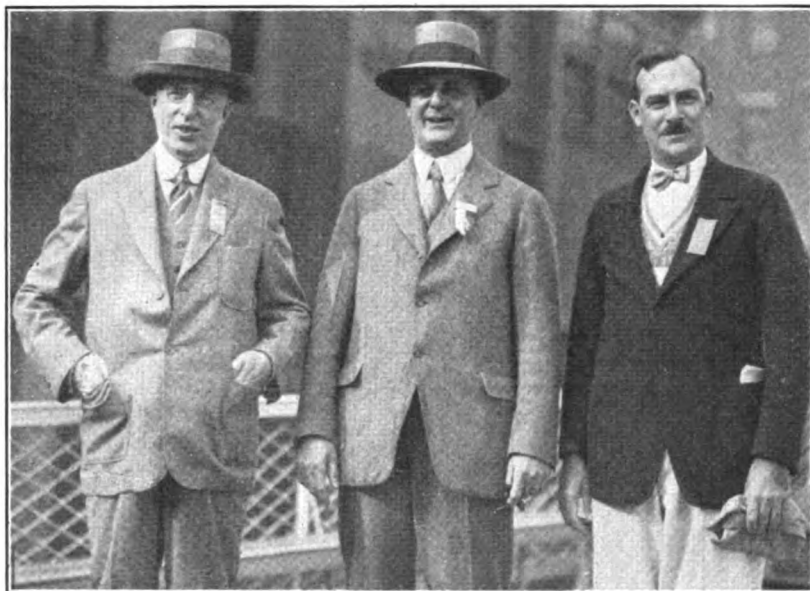


Photo courtesy of Boston Transcript

The committee of arrangements: Left to right Andrew P. Lane, Frank S. Davis (chairman) manager Maritime association and Capt. J. M. Hoffman, manager Boston Tidewater Terminal Co.

## Gen. George Uhler Dies

Gen. George Uhler for 23 years, until Jan. 1, 1926, supervising inspector general of the United States

steamboat inspection service died on Aug. 22 at his home in Washington. He was born at Delaware City, New Castle county, Del., July 5, 1853. At the early age of 28 he was chief

engineer of a large ocean cargo carrier having worked up through successive grades.

From 1893 to 1903 General Uhler was grand president of the Marine

# SUN SHIPBUILDING & DRY DOCK COMPANY

*Builders of*

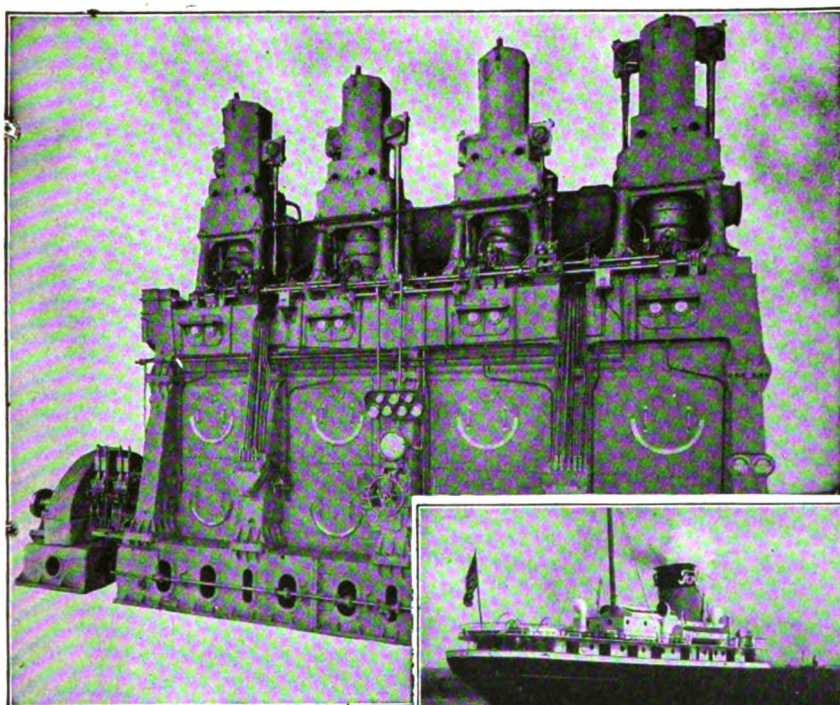


## SUN-DOXFORD DIESEL ENGINES

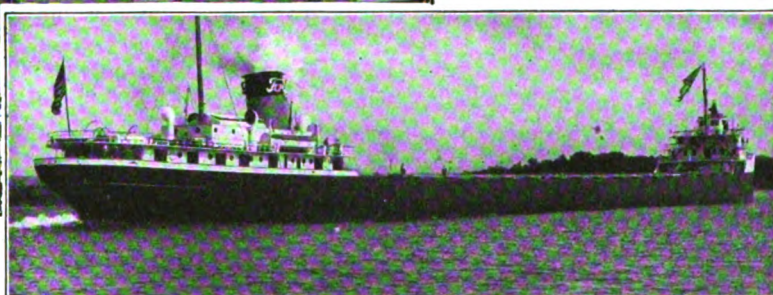


*The Engines that Power*

### "HENRY FORD II" *and* "BENSON FORD"



3000 S. H. P. Sun-Doxford Diesel Engines power the two motorships, "Henry Ford II" and "Benson Ford".



*M. S. "Henry Ford II"*

## SUN-DOXFORD *and* JUNKERS PATENTS

**Main Office and Works:**  
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Engineers Beneficial association from which position he was appointed to head the steamboat inspection service by President Roosevelt in 1903.

A particularly fitting tribute published in MARINE REVIEW for January, 1926, was paid to him as a man and chief by Dickerson N. Hoover who succeeded him as head of the steamboat inspection service.

## Well Known Shipbuilder Appointed Manager

Education along shipbuilding lines and a career devoted to practical ship building especially qualify W. S. Newell for his recent appointment as general manager of the shipbuilding division of the American Brown Boveri



W. S. NEWELL

Electric Corp., Camden, N. J. This company some time ago acquired the large splendidly equipped and well known plant of the New York Shipbuilding Corp. and, besides considerable commercial work, is now completing the mammoth airplane carrier SARATOGA for the United States navy.

Mr. Newell was born in 1878. He attended the Massachusetts Institute of Technology graduating in 1899. During the summer vacations between terms at school he served as cadet engineer in the American line and in a riveting gang at the Bath Iron Works. In 1899 he worked in an outside engineer's crew at Sparrows Point. From 1900 to 1901 he was an instructor in naval architecture and marine engineering at the Massachusetts Institute of Technology.

In 1902 Mr. Newell was appointed assistant superintending engineer of

the Bath Iron Works, Bath, Me., in which capacity he served until 1908. He continued with this company and in 1923 was made engineer and works manager. From 1923 to the time of liquidation he was general manager of the Bath Iron Works. He then became associated with Cox & Stevens, naval architects and engineers until he was appointed to his present position.

During his long residence in Bath, Me., Mr. Newell took an active interest in all civic affairs serving as president of the Bath water district, trustee of the Bath hospital, alderman, chairman of the finance committee, member of street and sewer board, member of the state of Maine board of vocational education, member of the state's fuel administration and as president of the Rotary club.

## Reconditioning Liners Is His Specialty

Carl E. Petersen, who recently resigned as naval architect of the United States lines has been associated with the reconditioning, maintenance and operation of many of the ex-German passenger liners since their acquisition by the government during the war. He received his education as mechanical engineer at Pratt institute and Polytechnic institute, Brooklyn, N. Y., later graduating from the United States navy engineering school.

After serving an apprenticeship in the machine shops of the Morse Dry Dock Repair Co., he became draftsman, estimator and finally outside superintendent which position he held for three years, during which time the seized German vessels were placed in troop service. Mr. Petersen left the Morse company after a service of eight and one half years to accept a commission in the United States navy as engineer officer for transport duty during the World war. After the armistice, he was superintendent engineer in the army transport service at New York during the period of conversion of cargo ships for troop service and their subsequent reconversion. Upon completion of this work, he became estimator for the construction and repair department of the shipping board, having charge of estimates and the costs of repairs in the New York district.

When the United States Mail Steamship Co. was formed, he became assistant naval architect and later naval architect for that company, retaining the latter position for several years after the vessels' opera-

tion was taken over by the United States lines. During this period, the liners, GEORGE WASHINGTON, AMERICA and other ex-German vessels were reconditioned for passenger service as well as extensive alterations planned and carried out on the PRESIDENT HARDING and PRESIDENT ROOSEVELT.

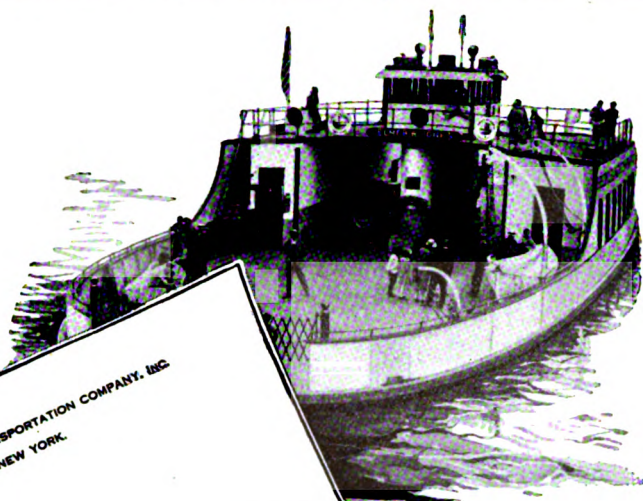
Upon completion of this work, Mr. Petersen left the United States lines, joining the United Dredging Co. as designing engineer at Galveston, Tex., leaving that position to become works manager of the Great Lakes Boat Building Corp., returning to the United States lines about a year ago to survey the superstructure of the AMERICA and to prepare plans and specifications for the structural repairs to that vessel, and for the conversion of the PRESIDENT HARDING



Underwood & Underwood  
CARL E. PETERSEN

and PRESIDENT ROOSEVELT to cabin class vessels.

When the AMERICA was badly damaged by fire while undergoing repairs, Captain Crowley, president of Fleet corporation directed Mr. Petersen to prepare plans and specifications for the immediate reconditioning of the MOUNT VERNON, later doing similar work on the AMERICA. He is a member of the American Society of Naval Engineers, the Society of Naval Architects and Marine Engineers, and the American Society of Mechanical Engineers, as well as a licensed engineer for ocean steam vessel of any tonnage. Mr. Petersen is a frequent contributor to the technical press and societies his studies and investigations concerning the economics of transatlantic passenger liners being particularly noteworthy.



BROCKVILLE & MORRISTOWN TRANSPORTATION COMPANY, INC.  
MORRISTOWN, NEW YORK.

New London Ship & Engine Company,  
Groton, Conn.

Gentlemen:

We are enclosing herewith view of Ferry Boat Elmer W. Jones constructed for this Company at your Plant and powered with your 300 HP Mechanical Injection Engine.

Permit us to say to you that this Ferry has not given us one minutes trouble since its delivery to us and is operating each day from 5:30 AM until 11:30 PM on the Ferry route between Morristown, N. Y. and Brockville, Canada. A little in excess of one half throttle gives us 10 miles per hour so you can easily appreciate that we have an abundance of surplus power for emergencies, and reliability in maneuvering seems to be its middle name.

The workmanship and material throughout is of the first order, and the interest your Company exhibited in suggesting minor changes and in carrying into effect changes suggested by this Company to make this Boat a perfect Ferry, is very gratifying to members of this Company and we hope to be able to reciprocate in tangible form by directing attention of anyone in this locality who may want a Boat or Engine, to the treatment we received at your hands.

Yours very truly,  
Brockville & Morristown Transp. Co., Inc.  
Sec.

125-ft. ferry boat, Elmer W. Jones, powered with a 300 S.H.P., 6 cylinder Nelseco Diesel Engine, type 6 M1-18. Eads Johnston, Architect.

Nelseco Diesels are built under M. A. N. patents; in 4-cycle, single-acting type, from 100 to 850 H. P.; in 2-cycle, double-acting type, from 1,000 to 10,000 H. P.; mechanical or air injection; suitable for direct current, alternating current, rope, belt or direct drive.

A 180 H. P. Nelseco Diesel is conveniently placed for your examination at our sales office.

#### PORT ELCO

247 Park Ave., New York, N. Y.  
Demonstrations made on appointment

## "Not one minute's trouble"

Read what these ship owners say.

This new ferry, Elmer W. Jones, was completely built and equipped at the Groton Works of the New London Ship & Engine Company. Since last spring it has been operating daily on the St. Lawrence River between Morristown, N. Y. and Brockville, Canada.

A similar boat has just been built for Mr. Carl G. Fisher for use in the harbor at Miami, Florida.

Both of these vessels are powered with Nelseco Diesel Engines of the latest mechanical injection type.

Nelseco engineers will be glad to tell you about other interesting Nelseco Diesel installations. In writing ask for Pamphlet MR.

NEW LONDON SHIP & ENGINE COMPANY  
Groton, Conn., U. S. A.

# NELSECO

Original licensees from and collaborators with M. A. N. since 1910

Please mention MARINE REVIEW when writing to Advertisers



## Oil Eng. Electric Tugs for Panama Canal

The Panama canal commission has awarded a contract to the Ingersoll-Rand Co. for four 480 horsepower, six cylinder, 15x20 inches, solid injection marine oil engines for installation in two oil-electric tugs which are soon to be built at the Balboa shops for service on the Panama canal. One of these will be assigned to the marine division on the Pacific coast for towing large vessels into and out of the entrance to the canal. The other tug will be used by the dredging division for servicing the dredging operations in the various parts of the canal.

The tugs when built, with an overall length of 150 feet, will be the largest and most powerful oil-electric tugs in the world, exceeding in both size and power all other oil-electric and diesel-electric tugs in American waters. The famous and efficient Ward Leonard system of pilot house control will be installed. This system provides a variable voltage control, and places the speed and direction of the propulsion motor under direct control of the pilot on the bridge.

Two engines will be installed in each tug for driving direct current generators and exciters. Power will thus be supplied for a single screw 750 shaft horsepower direct current double armature propulsion motor, current for motor driven pumps and electrical convenience. The tugs in an emergency will also be available for fighting fire as each will be equipped with motor driven fire pumps of large capacity.

## Lighthouse Tender Bids

With a bid of \$127,561 and nine months for completion, the Southern Shipyard Corp., Newport News, Va., was the lowest bidder for the proposed steam propelled lighthouse tender to be christened BEECH. Bids of other companies were as follows: Federal Shipbuilding & Dry Dock Co., Kearny, N. J., \$160,000; American Brown Boveri Electric Corp., Camden, N. J., \$153,000; Spedden Shipbuilding Co., Baltimore, Md., \$190,500; Staten Island Shipbuilding Co., Staten Island, N. Y., \$142,000 and Sun Shipbuilding & Dry Dock Co. \$149,800.

## Reorganize Old Company

The business of The Leslie Co., Lyndhurst, N. J., manufacturers of Leslie pressure regulators and reducing valves, has been purchased by

S. Inglis Leslie and a new company has been organized known as Leslie Co. with the following officers: S. Inglis Leslie, president; J. J. Cizek, vice president, and J. M. Naab, secretary and treasurer.

In addition to the president and vice president, the following have been elected directors of the new company: William L. Allison, senior vice president of American Arch Co.; F. A. Schaff, vice president of Superheater Co., and Frederic E. Schluter, president of Schluter & Co. Inc., investment bankers.

O. H. Hagerman, manager of the marine department of the Reading Railroad Co. for many years, died at his home in Philadelphia, Sept. 8. Mr. Hagerman was 66 years old and had been in ill health for some time.

## A Shipping Birthday

In celebrating its fifth birthday this week, the United States Lines looks back with satisfaction on steady growth. It must look forward as well, in the hope that one day the U. S. A. government will draw its poor, burnt finger out of the shipping pie, and let the United States Lines flourish as a private company. In the meantime the line's business in five years has increased by 47.27 per cent. This season the *Leviathan*, on her voyage from New York on July 3, brought to Europe 2414 passengers, the largest number carried eastbound by any ship this year. The same liner, on her sailing from Southampton and Cherbourg on Aug. 10, carried 2242 passengers, this number constituting the record westbound this year, with the peak of the season still to come. Then why does the United States shipping board lose such a lot of money?

Reprinted from the *Liverpool Journal of Commerce*, Aug. 20, 1926.

## Unauthorized

C. C. Hanks, formerly one of the publishers of the defunct *Great Lakes Vesselman*, has kindly called the attention of MARINE REVIEW to the activities of one Lewis Ring. Mr. Hanks informs us that this man is taking subscriptions for the now defunct *Vesselman* and offering the *Great Lakes Red Book* free.

MARINE REVIEW has no representative named Lewis Ring. The publication called the *Great Lakes Vesselman* stopped publication on May 15. No one is authorized to offer the *Great Lakes Red Book* free.

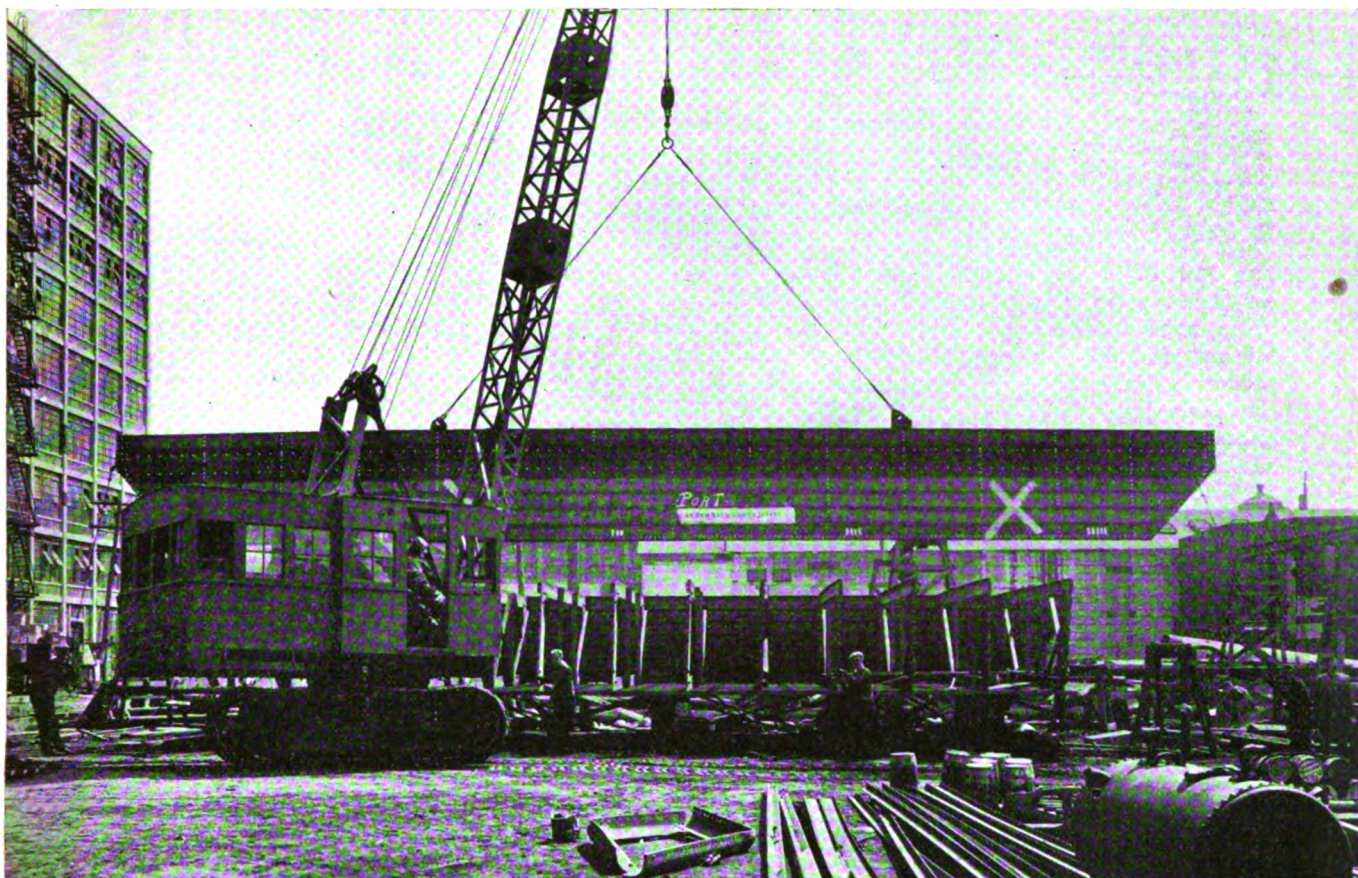
## Launch S. S. Algonquin at Newport News

On Sept. 9, the fourth new coast-wise cargo and passenger vessel for the Clyde line was launched at the Newport News Shipbuilding & Dry Dock Co., Newport News, Va. She is a sister ship of the *MOHAWK*, *SEMINOLE* and *CHEROKEE*, recently added to the fleet and now in active service in the line's New York-Florida service. Two more vessels, larger and still more elaborate, now also under construction at Newport News will be added to operate in the New York-Miami service of the Clyde line. With the addition of these two ships and the *ALGONQUIN* the total net tonnage built for this company will reach about 45,000 tons, aggregating in cost approximately \$14,000,000.

The sponsor of the S. S. *ALGONQUIN* was Mrs. Nellie D. Raymond, of a family long connected with the company. The new line has been named according to the custom of the Clyde line, after one of the prominent Indian tribes. The name is that of an aboriginal group of Quebec and Ontario Indians whose language forms a key to many other dialects from the same stock. Theodore E. Ferris, the well known New York naval architect is the designer of this ship, her sister ships and the two Miami liners now under construction. He has had the benefit of the close co-operation and individual and progressive ideas of H. H. Raymond, president of the Clyde line. These ships are splendid, staunch, seagoing vessels with most luxurious and comfortable passenger quarters. The length is 402 feet, beam 55 feet, and draft 20 feet. The vessel is single screw, driven by turbines through reduction gears at a speed of 17 to 20 knots. Oil fuel is burned under boilers. The fuel tanks capacity is 6180 barrels giving a steaming radius of 7000 miles, sufficient to cross the Atlantic and return without re-fueling.

The United States civil service commission has announced a competitive examination for the position of navigation officer. Applications must be on file at Washington, not later than Oct. 23.

The examination is to fill a vacancy in the bureau of navigation, department of commerce, at \$2760 a year, and vacancies occurring in positions requiring similar qualifications at this or higher or lower salaries. Competitors will be rated on practical questions concerning their knowledge of vessels and of navigation laws and regulations and education experience and fitness.

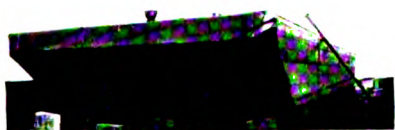


Showing a section of one of the eight Ellis Channel Steel Barges recently shipped to Venezuela.

## EN ROUTE FOR SOUTH AMERICA!

Only  
Eighteen  
Pieces

!



NOTE how Ellis System steel barges are knocked down for shipment. See how easily the barge sections are handled and consider how quickly the complete barge may be assembled. Only eighteen sections to a barge! Low cost construction is a big factor in the growing popularity of Ellis Hulls.

Ellis Channel System Steel Hulls are strong and seaworthy. Their splendid record for low upkeep will interest all progressive owners. Hulls built and under construction for varied types of service at home and abroad testify to the popularity of the Ellis Channel System.

Write for further information.

## ELLIS CHANNEL SYSTEM OF STEEL HULL CONSTRUCTION

PATENTED

EDGAR AMES, Sole Licensee

30 CHURCH STREET, NEW YORK

Car Floats, Oil Barges,  
Coal Barges, and similar  
vessels, including sea-  
going, harbor and inland



water-way types, can be  
designed and built to ex-  
ceptional advantage by  
the Ellis Channel System.

Please mention MARINE REVIEW when writing to Advertisers



# Equipment Used Afloat, Ashore

## An Oil Separator for Bilge and Ballast Water— Tested at Naval Engineering Experiment Station

BY W. J. BARNES

USE of fuel oil on shipboard has resulted in pollution of harbor waters, with attendant destruction of fish and material increase in the fire hazard of harbor property. This problem has become so serious that the last congress passed a law prohibiting the discharge of oil or water containing oil into coastal waters of the United States and territories. Thus a vessel approaching these shores must pump ballast water from oil tanks some distance at sea. This procedure means loss of time if the ship lays to outside of the limits

capacity of 50 long tons or 13,450 gallons of liquid per hour, and was manufactured in England under direction of the inventor, H. M. Alexander. It is of the gravity type and depends entirely for successful operation upon the difference in density of oil and water.

In actual construction the separator has four distinct stages in which separation takes place, as shown in the accompanying sectional elevation. The mixture of oil and water is introduced into the feed box through the inlet nozzle marked A.

which are near the bottom of the first-stage compartment. Deflector plates are provided at the outlet of each riser. Further separation takes place in this compartment, the oil rising to the top and passing through the 2 inch pipe nozzles into the oil-seal compartment and thence out of the separator. The water passes out of the bottom of the second compartment through an annular space between the first-stage and the second-stage compartments, and thence over a circular weir into the third-stage compartment. This compartment is filled with broken glazed pottery. The water passes downward through this compartment and out at the bottom; then, rising through another annular space and passing over another weir, it enters the top of the fourth-stage compartment which is also filled with crockery. The water passes down through this compartment and enters the 7 inch water-outlet pipe which is located at the bottom of the casting. It then rises to the bottom of the discharge chamber of the feed box and, falling over another weir, enters the outboard delivery line of the separator.

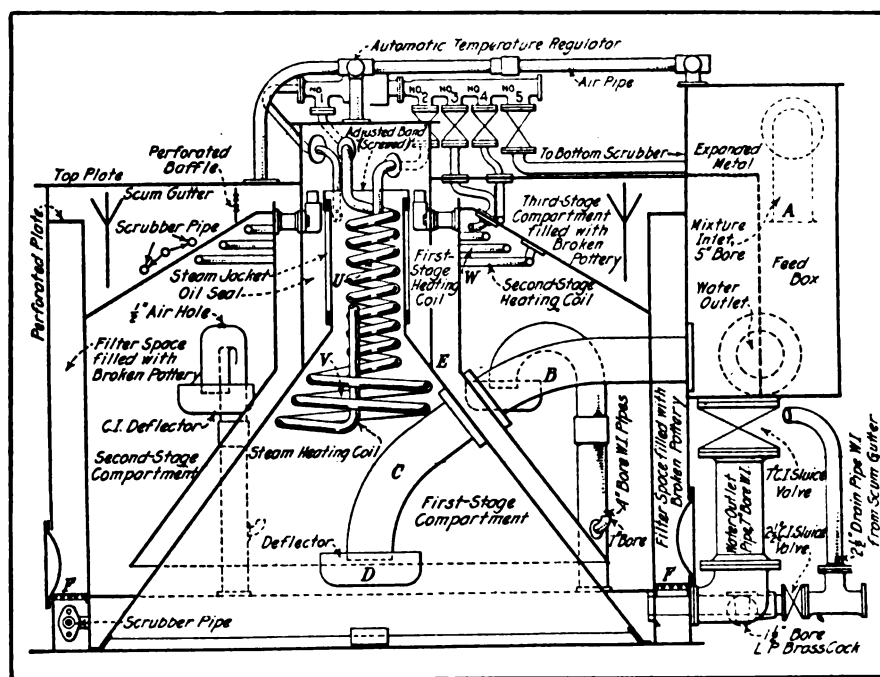
### Gravity Flow is Used

The flow of the water and oil through the separator is entirely by gravity. The crest of the outlet water is 6¼ inches below that of the inlet, the head thus provided being sufficient to maintain a steady, even flow without the necessity of any manual adjustment or regulation.

The construction of the feed box permits any entrained air in the mixture to pass off before entering the first stage. Any air or vapors that are thrown off during further separation are carried away through the air vents provided as shown.

In the tops of the first and second-stage compartments are located two heating coils controlled by suitable valves, 1, 2 and 3. Valves 4 and 5 control the steam supply to the scrubber lines in compartments 3 and 4, respectively. Condensed steam from the coils is discharged through pipes to a header and thence through a steam trap to the hot well.

Under normal operating conditions, steam will be supplied to the first



### DIAGRAMMATIC ARRANGEMENT OF "ROCKET" OIL SEPARATOR

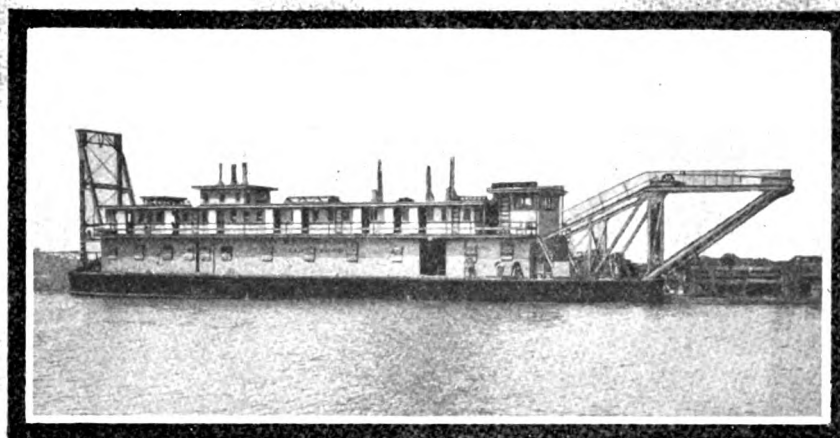
to pump tanks; or if pumping is started some distance at sea the stability of the boat is materially decreased, which from an operating standpoint is inconvenient and may be a dangerous procedure in heavy weather. Various methods of eliminating the oil from the discharge water have been suggested, one of the most interesting of which is the "Rocket" oil separator, which was recently tested at the United States naval Engineering Experiment station.

The separator tested had a designed

W. J. Barnes is associate mechanical engineer, U. S. naval engineering experiment station. Presented before the American Society of Mechanical Engineers at Annapolis, Md., Nov. 1, 1924.

and after passing over the weir and through the expanded-metal screen, it flows through the pipe *B-C*, passes the deflector *D*, and enters the first-stage compartment, where the major portion of the separation takes place. The oil rises to the top of the cone and when a sufficient head is built up, it overflows the circular weir into the annular oil-seal section, and passing through the oil-discharge pipe, is conducted from the separator.

The water from the first stage, which still contains an appreciable amount of oil, passes into the second-stage compartment from the bottom of the first stage and through four 4 inch risers, the entrances of



## A GREAT DREDGE for a GREAT JOB

WHEN the Atlantic, Gulf & Pacific Company undertook the dredging contract off Miami, they ordered constructed at Newport News the great dredge pictured above. This dredge, recognized as the most modern now in operation, is direct connected, Diesel-driven, with a 26" suction pipe. Likewise, the War Department Engineers ordered at Newport News the Dredge "Raymond," for service in the Delaware River.

In addition to the tremendous major construction constantly in process at the Newport News Yard, square-end equipment forms no inconsiderable volume. It can be built rapidly here — the yard facilities are unequalled and the climate permits outdoor work the year 'round.

It can be built economically — labor is plentiful and good. It is built to wear — "like a Battleship," is the reputation of Newport News.

*For quick delivery; economy of construction; and long life; consider this Plant first in your plans.*

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY  
NEWPORT NEWS, VIRGINIA, U. S. A. - NEW YORK: 233 BROADWAY



*The Plant at*  
**NEWPORT NEWS**

*Please mention MARINE REVIEW when writing to Advertisers*



heating coil in the first-stage compartment only, but under winter conditions it may be necessary to supply additional steam to the second coil in the first stage and to the coil in the second stage in order to reduce the viscosity of the oil and effect further separation.

When the separator is in operation, the small quantity of oil remaining in the water after leaving the second stage is further reduced by adhesion to the crockery in the third and fourth stages, the particles of oil adhering tenaciously to the glazed surfaces of the pottery while the water passes through.

#### Filters Are Scrubbed With Steam

After the separator has been in operation for a considerable length of time, the pottery filters in the third and fourth stages are cleansed by "scrubbing" with steam. To accomplish this cleansing the discharge valve in the water-outlet line is closed and sufficient water added through the inlet line to raise the water level within the separator above the "scum gutter" located between the third and fourth-stage compartments. The water supply is then cut off and steam admitted through valves 4 and 5. The steam passes through the pipe coils at the bottom of the compartments and out through small holes drilled in these pipes. The steam and hot water seem to have a scouring action which breaks loose the oil from the surface of pottery and causes it to rise to the surface. After the scrubbing action is completed, the valve in the drain line from the scum gutter is opened and the accumulated oil is drained, either into the second-stage compartment for further separation, or to the suction line of the pump for repassage through the separator. Water may be added to the separator to maintain the oil and water level above the scum gutter until the surface is thoroughly clean, but it is generally desirable to keep a thin film of oil over the surface of the water in the separator as this film seems to have an affinity for minute particles of oil which otherwise might be carried further into the separator.

For testing the separator water from the Severn river was supplied through a 6 inch line by a centrifugal pump. The oil injection nozzle was located at one outlet of a tee in the supply line. Bunker A fuel oil was used during the test. The oil was run by gravity from the two large oil storage tanks to the suction oil storage tank, from which it was drawn by the injection oil pump

and passed through the oil meter into the water line. The oil discharged from the separator ran by gravity into the separated-oil storage tank from which it was raised by the second pump to the oil storage tanks.

In conducting the test, oil was introduced into the separator at three different rates of flow, namely, 5, 25 and 50 long tons per hour. Runs were made at each of the three rates of flow with an oil content of approximately 2, 5 and 10 per cent. An overload run with 5 per cent oil content was also made. The above runs were made with a 1½ inch by ¾ inch reducing coupling screwed on the end of the 1½ inch oil supply line. Runs were also made with full 1½ inch pipe opening and with a nozzle composed of 1½ inch pipe capped at the end and helically drilled with sixty ¼ inch-diameter holes. Two runs were also made to determine the efficiency of separation in the first two gravity stages as compared with the complete separation obtained with the entire separator. The data observed covered rate of water injection, rate of oil injection, temperature of mixture in, temperature of outlet oil, first stage, and temperature of water out. Samples of injection oil, separated oil, and discharge water were taken on all runs, and on the last two runs samples of water at the end of the second stage were also taken. The oil samples were analyzed for water content and the water samples for oil content.

The negligible amount of oil in the discharge water is clearly shown by the analyses of the samples taken.

The separated oil, when analyzed, was found to have a noticeable entrained-water content which gradually increased as the test proceeded. This water content was a result of continued recirculation of the injection oil through the separator. It may be noted, however, that in general the increase in water content in the oil for a single passage through the separator was not over 4 per cent.

It is interesting to note that even at rates of flow in excess of the designed capacity of the separator, the discharge water was, for all practical purposes, clean. The slight increase in oil content of the discharge water appeared as occasional extremely small globules which, when allowed to stand, would gradually rise to the surface of the sample and would barely form a connected oil film.

The analysis of the water from the second gravity stage, runs 14 and 15, shows the effectiveness of the gravity separation as well as the ability of the

filters to remove the oil which still remains in the water after passing the first two stages.

No effort was made to measure the steam consumption, as very little was used. An estimate of the steam consumption for typical full-load conditions as obtained in one of the tests showed a steam consumption of 178 pounds at 15 pounds gage for a rate of flow of water through the separator of 48.46 tons per hour and a rate of oil through the separator of 2.29 tons per hour. During the test many of the runs were made with steam on the heating coils only a portion of the time. The scrubbers need steam only at occasional intervals when it becomes necessary to clean the filters. The scrubbing action of the steam seemed to be effective as was evinced by the amount of scum which rose from the filters.

#### An Effective Separator

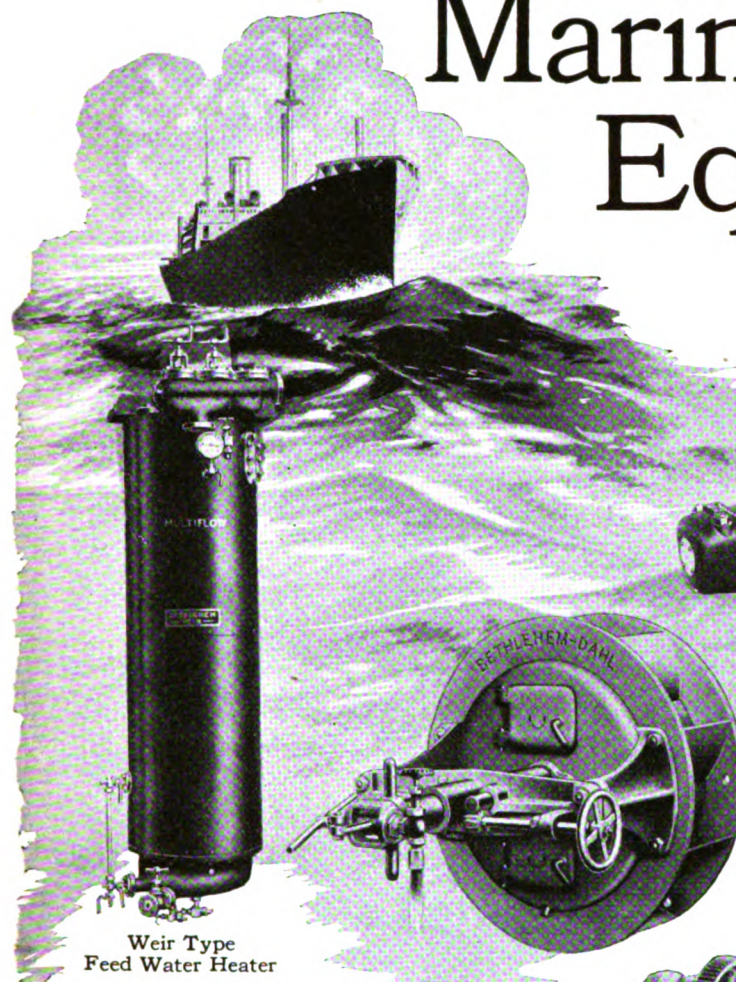
From data and observations taken during the test, the following conclusions may be drawn: (a) The separator is very effective in operation within and slightly in excess of its rated capacity. (b) The steam consumption is low, and in some cases heating may be practically dispensed with. A thermostat-controlled valve would be desirable in place of valve 1, which, during the test, was manually operated. (c) The separator functions at any rate of flow within its rated capacity with no regulation or attention other than that required by the heaters and scrubbers. (d) The effectiveness of separation is dependent to some extent upon the intimacy of the mechanical mixture of oil and water. (e) The separator appears to function with mixtures of oil and water where a slight emulsification has occurred, emulsified oil being separated out with other oil.

#### Prohibit Oil Pollution

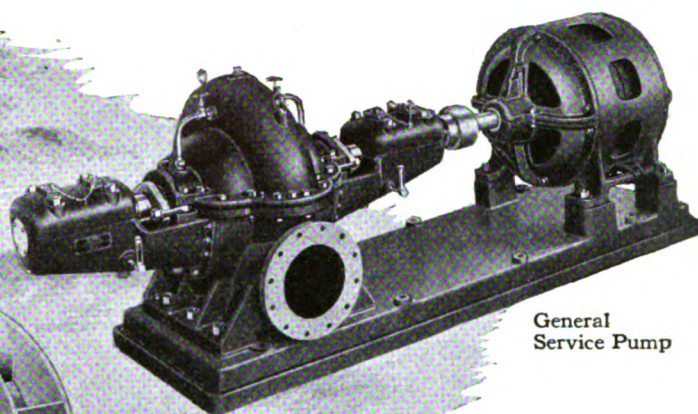
The board recently considered the question of oil pollution of navigable waters, which had been discussed at meetings of a committee made up of members from the different government departments, which committee was called "the inter-departmental committee on oil pollution of navigable waters." Instructions were issued to the president of the Fleet corporation to take such action as he deemed practicable to carry out the recommendations of this committee in prohibiting shipping board vessels from discharging oil or oily mixtures within a zone of 50 miles from the coast of the United States. Effort is being made to stop oil pollution.



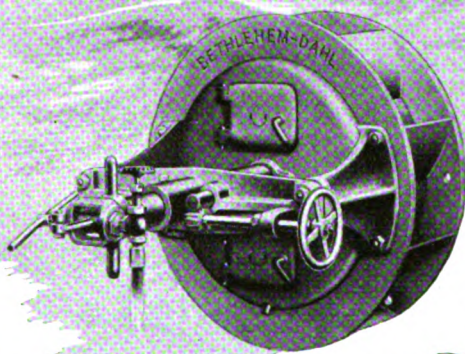
# A Complete Line of Marine Auxiliary Equipment



Weir Type  
Feed Water Heater



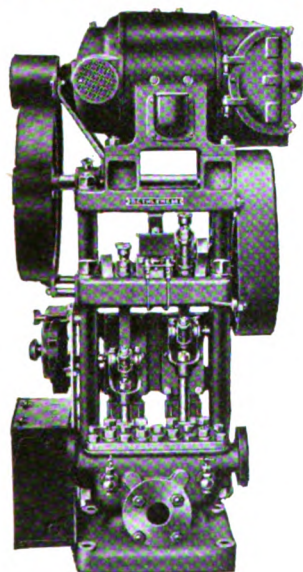
General  
Service Pump



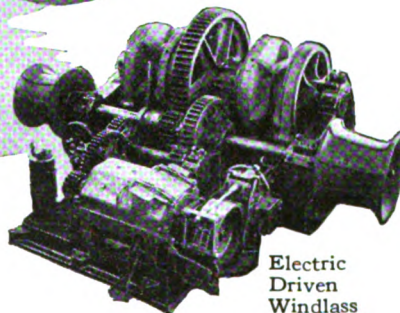
Furnace Front  
Dahl Mechanical  
Oil Burner

Bethlehem is Prepared  
to Furnish and Install  
*Marine Auxiliary  
Equipment:*

- for every auxiliary requirement of newly constructed ships.
- for the complete conversion of the auxiliary equipment of ships.
- as a part of a complete motor-ship conversion.
- as individual auxiliary units for every purpose.



Reciprocating General  
Service Pump



Electric  
Driven  
Windlass

We will gladly furnish, on request, detailed information regarding our marine auxiliary equipment.

BETHLEHEM SHIPBUILDING CORPORATION, LTD.,  
BETHLEHEM, PA.

GENERAL SALES OFFICES: 25 BROADWAY, NEW YORK CITY

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# BETHLEHEM

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# Late Decisions in Maritime Law

## Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

IT WAS decided in the case of *United States v. Middleton*, 3 F. (2d) 384, that a broker, in loading goods on a ship owned by the government and operated by another, was required merely to act in good faith, and not liable to the government on recovery by the shipper from the owner of damages for delay in shipment, merely because it knew that the certificate of inspection had expired, and knew that under the government's general policy, the operator could not transport goods from the particular port. The court decided further that delay in shipment did not render the owner liable to the shipper's agents, who had no property at risk in the venture, on the theory that, if the venture had been successful, the shipper would have been satisfied with its bargain, and would have done more business through the agents on which the agents would have realized a profit.

IT IS a fault for a barge to be without an anchor, it was said in the case of *RED EAGLE*, 3 F. (2d) 541, the court also holding that there is no duty on the master of a stakeboat to look after the fastenings of barges moored to it, such duty resting on the barges.

FOOD and supplies for passengers of a vessel are necessities, said the court in *GDANSK*, 3 F. (2d) 565, and the furnishing of such supplies conforms to the maritime service of the vessel and gives a right of action in rem.

ON INJURY to a seaman during the voyage, it was the captain's duty to obtain medical aid at an intermediate port, if he had no means of affording medical attention on board, and the captain's error of judgment in believing that the injured seaman was shamming did not relieve the ship from responsibility of providing maintenance and cure.—*Morris v. United States*, 3 F. (2d) 588.

WHERE the master of a barge failed to obey the wharfinger's instruction to breast off five feet from bulkhead, so that the barge would clear ridge of mud at low tide, the owner, and not the charterer was liable for injuries resulting therefrom.—*C. F. Harms Co. v. Turner Const. Co.*, 3 F. (2d) 591.

THE measure of damages recoverable by an injured seaman on the master's refusal to afford medical aid and maintenance is the consequential damages, but does not include dam-

ages for pain and suffering nor compensation for injury due to physical incapacity, and an injured seaman, who was forced to work at a time when he was entitled to be maintained in rest for cure, was entitled to compensation for such period.—*Morris v. United States*, 3 F. (2d) 588.

UNDER the rule that restitution in integrum is the maxim to be applied in collision cases, if it is shown by evidence that a vessel substantially identical with that lost can be purchased in the open market for a certain price, that price represents the market value so far as the loss of the injured party is concerned; that the owner and master of the vessel lost was of more than usual ability and skill, and was able to obtain profitable charters and make good earnings, is not an element to be considered in estimating his loss, where the vessel could be replaced in the market; and where the vessel was a total loss, estimated profits from the charter not entered upon are not an element of damages recoverable. *THE BENJAMIN A. VAN BRUNT*, 3 F. (2d) 655.

ALIEN on a vessel cannot be enforced against a stranger to the title having a maritime lien by one who, as part owner, is himself liable for the debt underlying such lien.—*FRANK BRAINERD*, 3 F. (2d) 664.

EXCEPTIONS in bills of lading issued on behalf of a barge, for goods laden on board, apply only to the barge, it was decided in *Sacramento Navigation Co. v. Salz*, 3 F. (2d) 759, and not to a towing tug, not mentioned therein, though it is the property of the same owner, and such exceptions do not relieve it from liability for negligent towage.

THE master of a schooner and the master of a towing tug were both held in fault by the court in the case of *Blanchard Lumber Co. v. Metcalf*, 3 F. (2d) 768, for the stranding of the schooner in a tidal river; the master of the schooner for ordering her out after the most favorable state of the tide had passed, and the master of the tug, who knew the river, for obeying the order.

WHERE onions were shipped in crates constructed so as to make their contents visible, the carrier was put upon notice and was bound to furnish a vessel seaworthy for the conveyance of a cargo of that nature; and where the cargo was dam-

aged by delay caused by gross negligence in navigation of the vessel, resulting in the ship going aground, general average will not be ordered, but libellant should recover the difference between the market value of the goods at place of delivery in good condition and the net amount realized from the sale of goods in their damaged condition.—*BUCKLEIGH*, 3 F. (2d) 829.

ATUG is not an insurer of the safety of its tow, nor responsible for errors of judgment of the master, if a competent seaman exercising due care.—*ASHWAUBEMIE*, 3 F. (2d) 782.

WHERE the owner of a tug contracted to transport a scow, and to take entire charge of its navigation, the owner, having no representative thereon, was responsible for its seaworthiness, and the tug for its navigation and for placing lights thereon necessary for its safety and the safety of other vessels.—*LIZZIE M. WALKER*, 3 F. (2d) 921.

ABRIDGE over a navigable stream is an obstruction to navigation, and when the Federal authorities authorize the construction of a bridge with a draw, the duty is cast on those maintaining it to see that the draw is properly operated.—*BRIMSTONE*, 3 F. (2d) 1011.

SERVICES rendered on employment by its agent in fumigating the baggage of a steamship, required by the United States medical officer of the port before she would be allowed to land her passengers, gave the right to a lien against the vessel.—*SUSQUEHANA*, 3 F. (2d) 1014.

PROVISION in a contract of carriage made by tickets for a tourist voyage, including shore trips to designated places, giving a carrier the right to withdraw a shore excursion did not give it the right to refuse to take passengers on a designated trip without a substantial reason for not doing so.—*Ebsary v. Raymond Whitcomb Co.*, 4 F. (2d) 285.

ONE who furnished oil to a vessel owned by the United States, at the request of an agent authorized to buy supplies furnished at the master's request, and who advanced money to pay stevedores for loading a vessel at the master's request, was entitled to a lien on the vessel.—*Thompson v. United States*, 4 F. (2d) 412.

# Shipping Board's First Repeat Order for Diesel Engines placed with **WORTHINGTON**

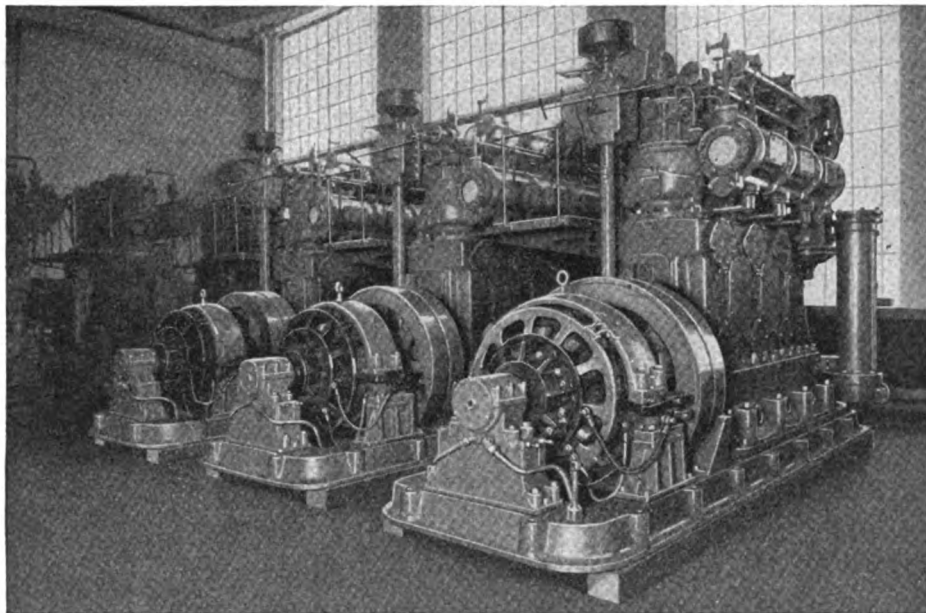


**T**HE first repeat order for Diesel Oil Engines in the Shipping Board's program of conversion of idle ships has been placed with the Worthington Pump and Machinery Corporation.

This order is for six auxiliary Diesel Oil Engines of the two-cycle, single-acting, port-scavenging, air-injection type. The engines are of crosshead design with all parts of the running gear force-feed lubricated. Stuffing boxes between the working cylinders and the crank case prevent contamination of the lubricating oil and permit the use of the under side of the motive pistons and the lower part of the motive cylinders for furnishing the requisite scavenging air.

The engines are duplicates of the six Worthington auxiliary Diesel Engines purchased in 1925 for installation on the M. S. "Tampa" and the M. S. "Unicoi" for which Worthington supplied the double-acting, two-cycle main engines—the first main-drive engines completed under the Shipping Board's conversion program.

Quick deliveries are a part of Worthington service. Repeat orders the result of unexcelled design and performance.



Worthington auxiliary Diesel Engines, part of the Shipping Board's initial order, ready for shipment. The engines are direct-connected to 75-kw. direct-current generators for supplying electricity for lighting and for

operating engine-room and deck machinery. Each engine is equipped with an oversize air compressor sufficient to furnish injection air for its own requirements and also 170 cu. ft. of free air per minute for charging manoeu-

vering tanks; and in case of emergency, supplying injection air to the main engines. When excess air is not required, the extra cylinder for supplying this air is cut out by a simple device.

Oil and Gas Engines  
7231-4

Pumps

Compressors

Condensers

Oil and Water Meters

Feedwater Heaters

WORTHINGTON PUMP AND MACHINERY CORPORATION, 115 BROADWAY, NEW YORK CITY. BRANCH OFFICES IN 24 CITIES

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# Marine Business Statistics Condensed

## Record of Traffic at Principal American Ports for Past Year

### New York

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	491	2,034,147	507	2,075,643
July	493	1,943,133	546	2,251,396
June	542	2,337,678	563	2,279,208
May	448	1,856,777	538	2,126,788
April	483	1,967,964	538	2,248,081
March	523	2,090,847	511	2,033,938
February	404	1,591,273	454	1,826,886
January	407	1,671,761	463	1,883,094
December	431	1,706,900	510	2,022,775
November, 1925	473	1,902,745	488	1,886,587

### Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)  
(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	109	248,435	81	170,661
July	92	191,680	69	128,381
June	104	229,631	66	109,561
May	97	215,829	69	151,287
April	80	185,401	61	135,919
March	107	264,754	72	158,858
February	78	184,715	52	113,768
January	76	206,081	52	136,040
December	83	194,283	53	142,885
November, 1925	83	216,604	44	116,468

### Boston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	128	321,377	96	206,879
July	152	336,135	108	274,513
June	164	370,626	109	262,468
May	184	277,009	111	261,878
April	101	285,245	77	210,542
March	117	356,432	62	173,217
February	92	263,475	42	136,613
January	97	287,335	55	156,167
December	96	270,869	67	210,652
November, 1925	115	341,258	59	147,554

### Portland, Me.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	23	47,089	26	45,669
July	27	47,885	26	47,569
June	29	44,390	29	46,942
May	19	49,894	17	47,016
April	23	48,836	32	73,947
March	34	97,413	31	88,462
February	23	64,150	23	66,660
January	26	78,508	27	81,917
December	31	85,651	29	75,072
November, 1925	25	35,616	23	33,194

### Providence

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	7	29,207	5	18,641
July	5	17,954	3	8,355
June	7	25,057	6	20,806
May	8	28,449	5	23,480
April	15	47,557	8	34,025
March	8	29,622	7	30,033
February	6	20,355	6	24,221
January	16	52,660	6	27,149
December	6	16,446	8	26,811
October, 1925	9	35,405	6	21,232

### Portland, Oreg.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	40	150,609	46	167,419
July	24	93,977	33	127,270
June	22	77,850	45	156,103
May	35	128,351	43	152,890
April	17	66,789	29	107,892
March	21	85,073	38	134,432
February	23	81,440	33	114,147
January	22	84,722	26	97,068
December	23	86,443	40	144,392
November, 1925	28	108,796	37	140,784

### Baltimore

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	228	672,453	221	639,677
July	211	644,261	202	603,648
June	138	402,230	132	371,781
May	120	369,729	121	355,443
April	107	330,401	110	326,649
March	120	382,983	119	362,256
February	102	304,714	99	288,640
January	97	802,341	88	264,249
December	105	814,958	109	332,721
November, 1925	106	334,997	99	312,705

### Norfolk and Newport News

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	188	545,861	255	733,837
July	267	727,374	309	854,305
June	78	215,803	171	502,701
May	40	107,858	140	368,515
April	21	45,875	126	305,549
March	22	40,160	140	395,033
February	20	48,377	108	298,766
January	26	69,958	96	266,019
December	24	57,907	100	279,570
November, 1925	27	78,573	81	254,439

### Savannah

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	43	102,126	41	99,244
February	40	97,908	46	121,792
January	38	103,029	38	106,472
December	37	101,726	35	91,141
November	37	112,158	38	117,064
October	45	125,766	47	126,452
September	50	137,030	39	103,408
August	34	77,027	39	87,455
July	38	97,332	34	91,981
June, 1925	26	60,788	27	60,924

### Key West

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	84	98,702	87	99,362
July	78	86,124	77	86,323
June	94	110,100	94	108,581
May	114	126,089	109	120,597
April	88	101,331	88	99,227
March	102	117,292	90	114,917
February	70	85,607	69	88,229
January	80	110,684	81	110,084
December	89	121,193	88	113,996
November, 1925	96	113,222	89	107,091

### Mobile

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	89	166,164	81	158,197
July	86	153,642	84	159,256
June	89	168,610	89	163,818
May	99	183,795	95	191,442
April	109	205,035	98	178,025
March	125	228,481	115	221,022
February	100	153,884	92	188,057
January	109	212,005	78	150,384
December	104	183,941	89	173,371
November, 1925	101	191,490	95	185,722

### Seattle

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	53	229,111	48	206,042
July	35	146,670	31	126,407
June	39	165,989	42	181,090
May	39	159,755	44	163,718
April	51	215,641	47	191,161
March	38	166,536	45	184,067
February	42	168,308	45	182,920
January	45	182,889	50	204,058
December	47	201,460	55	231,787
November, 1925	47	199,055	46	196,343

### New Orleans

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	275	764,464	256	721,654
July	263	716,066	270	739,005
June	255	658,385	221	665,960
May	287	753,621	284	772,138
April	248	626,277	296	694,673
March	295	754,863	300	751,954
February	255	717,048	250	691,747
January	241	659,776	243	652,209
December	273	750,625	279	764,022
November, 1925	261	645,709	232	629,728

### Charleston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	24	64,334	20	51,505
July	13	37,020	13	33,908
June	8	27,095	10	30,601
May	5	18,321	10	20,514
April	11	37,459	12	27,166
March	18	64,432	20	49,897
February	10	35,629	10	21,945
January	8	27,610	13	27,237
December	14	38,441	10	26,597
November, 1925	17	50,093	13	31,111

### Galveston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
February, 1926	39	89,426	71	208,383
January	36	92,194	75	235,699
December	38	83,590	97	300,872
November	34	107,440	83	266,458
October	43	98,168	96	302,581
September	33	95,954	72	225,194
August	28	80,524	41	133,058
July	36	100,359	52	141,316
June	47	120,423	57	177,447
May, 1925	46	114,702	53	151,098

### Los Angeles

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1926	127	460,296	103	352,367
June	123	349,936	88	344,187
May	133	376,720	112	351,123
April	149	434,866	130	370,158
March	139	371,793	128	305,105
February	119	363,875	111	306,161
January	130	381,785	115	335,041
December	149	392,707	109	310,852
November	181	398,459	123	337,483
October, 1925	261	365,552	183	268,611

### San Francisco

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1926	169	580,310	111	466,346
July	160	523,527	102	495,849
June	142	561,774	100	419,036
May	154	605,068	116	428,814
April	155	583,821	167	602,680
March	144	571,040	135	511,010
February	133	506,778	134	506,317
January	154	544,882	139	528,315
December	135	532,691	153	593,556
November, 1925	124	491,579	142	547,770

### Port Arthur

(Exclusive of Domestic)

Month	Entrances	
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# With Byrd at the Pole

BYRD ARCTIC EXPEDITION  
S. S. CHANTIER

Hotel McAlpin  
New York, N.Y.  
June 23, 1926.

Electric Storage Battery Co.,  
23 West 43d Street,  
New York, N.Y.

Gentlemen:

I take great pleasure in writing you this letter and thanking you for the splendid service given us by your Company and your batteries.

The S/S CHANTIER, our ship, which carried us almost eleven thousand miles on the North Atlantic and adjacent waters was 100% equipped with your batteries. You may justifiably take pride in the realization that your batteries at all times did what they were called upon to do, and upon our return to New York are in splendid condition.

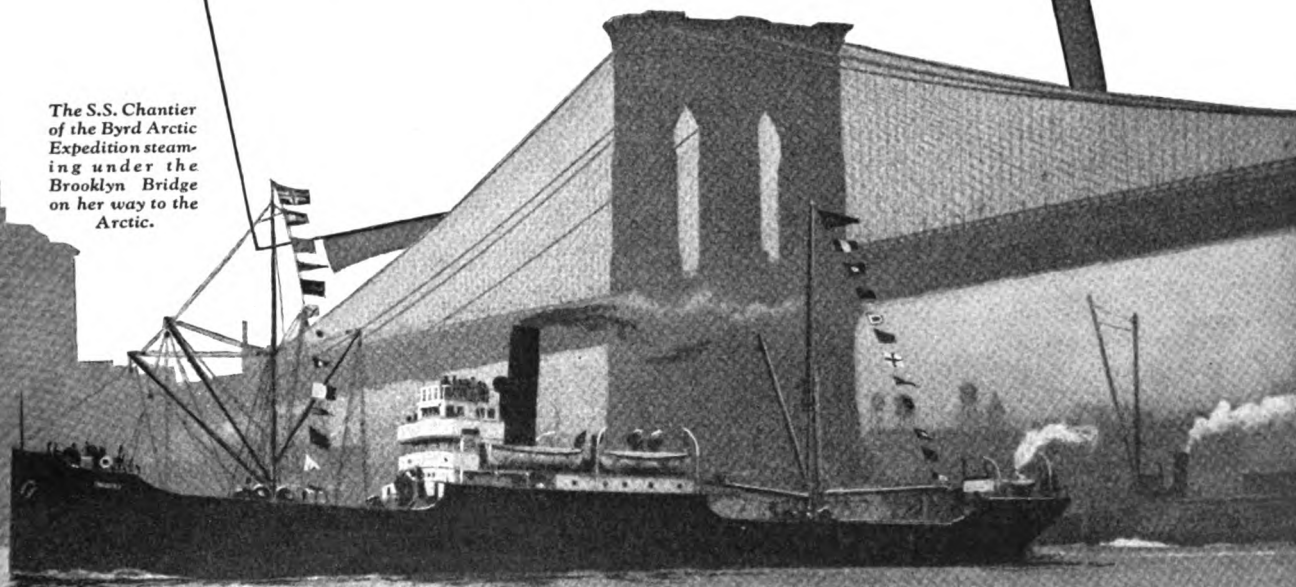
Also our plane, the JOSEPHINE FORD, was equipped with an Exide battery in conjunction with the radio. This battery was carried on the flight which resulted in successfully reaching the Pole. I take pleasure in sending this battery to you for its possible historic and sentiment value.

Assuring you of our appreciation of your organization and Exide Batteries, we are

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*Robert Byrd*  
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# What the British Are Doing

Short Surveys of Important Activities in Maritime  
Centers of Island Empire

**T**HE worst effects of the coal strike are now being felt at the shipbuilding yards. This is especially hard upon the steel trade, which has waited anxiously for months for the orders for shipbuilding steel, so essential to large production. Several of the most expensive modern mills have been laid down for the production of ship plates. It was announced a day or two ago that Harland & Wolff's yard at Govan has been closed down for lack of shipbuilding steel. The yard has orders for twelve large vessels, and has been unable to lay down a single keel. This is only one example of many. Some Clyde firms have sufficient contracts to keep their yards and shops going for well over twelve months, and the shipbuilding outlook is undoubtedly better.

**T**HE Scotch output for August consisted of only eleven vessels of 35,474 tons, of which the Clyde turned out 31,970 tons. In spite of difficulties the Clyde total was larger than any of the three preceding months, though rather smaller than the three months previous to May. For the eight months the Clyde out-

put comprised 100 vessels of 203,419 tons, whereas in the corresponding period of last year 153 vessels of 389,731 tons were launched. The highest record for the period was in 1920 when 142 vessels of 440,174 tons were launched. The output is the lowest for many years. Some of the yards have not been reopened since the July holidays, although one firm has three vessels on its books. Those at work, have of course, made large use of foreign steel.

**T**HE following contracts were reported during August, though they have not all been officially confirmed: William Hamilton & Co., Port Glasgow, to build an oil tank steamer for H. E. Moss & Co., Liverpool, and a general cargo steamer for foreign owners; Lithgows (Ltd.) Port Glasgow, a cargo steamer for Turner & Co. of London and Liverpool, and a cargo steamer of 8090 tons deadweight for other owners; Ferguson Brothers, Port Glasgow, two hopper barges, each 170 feet in length and costing altogether £58,000 for the government of Queensland; Alley & MacLellan, Polmadie, 18 barges, each 80 feet in length; and McGruer

& Co., Clynder, a 6-ton ketch for a Glasgow owner. It was also reported that the two larger motor liners ordered on the upper reaches by the New Zealand Shipping Co., and the Federal Steam Navigation Co. acting in co-operation, had been canceled, but so far as can be ascertained all that has happened is that the plans are being radically altered.

**A** FERRYBOAT for transporting passengers at the Royal Albert dock, London, and which had just been delivered to the Port of London authority has some special features. The ferryboat is required to move in any given direction, either ahead or astern, at an angle broadside on, or even about its own vertical axis. Owing to the crowded condition of the area it must be free from out way projection and dispense with either rudder or crew. A further requirement is that it shall be able to hold itself against landing stages or steps when embarking or disembarking passengers, without the necessity for tying up. To meet these requirements the principle of hydraulic propulsion is adopted of the Gill type.

(Continued on Page 62)

## What's Doing Around The Lakes

**H**EAVERY rains and the swelling Illinois river combined to help slacken the withdrawal of water from Lake Michigan last month, when officials of the Chicago sanitary district ordered that the water in the drainage canal be sufficient only to prevent the Chicago river from resuming its original flow into the lake. This was not a part of the Great Lakes level controversy, but the measure was taken to relieve the Illinois river which threatened further damage to territory along its course, following almost unprecedented rains for the fall season in that territory. The diversion of water from Lake Michigan was kept at a low rate until the downstate conditions were re-

lieved. Representatives of the Illinois Agricultural association had appealed to sanitary district officials for high-water relief.

**F**IVE passenger steamers have been taken off Lake Michigan services by the Goodrich Transit Co., Chicago, as lake tourist interest ebbs with the waning season. The Mackinac Island route is out for the season, and the excursion boats to Milwaukee, Michigan City and Benton Harbor also have been taken off, but the regular services to these points still are being maintained. Lack of protracted hot weather during the summer stifled tourist traffic on the Great Lakes, but some of the

steamship companies report their 1926 business showed no more than a 5 per cent loss from last season. The traffic to Mackinac Island and some of the other upper Michigan points was comparatively good this season.

**S**ECRETARY OF COMMERCE HOOVER'S recent address before the Hammond, Ind., chamber of commerce on Great Lakes levels, drainage and the extent of Chicago's water "steal" from Lake Michigan has stirred anew the Chicago sanitary district's argument for regulating works at proper points in the Great Lakes so that the surplus of water in years of heavy rainfall might be

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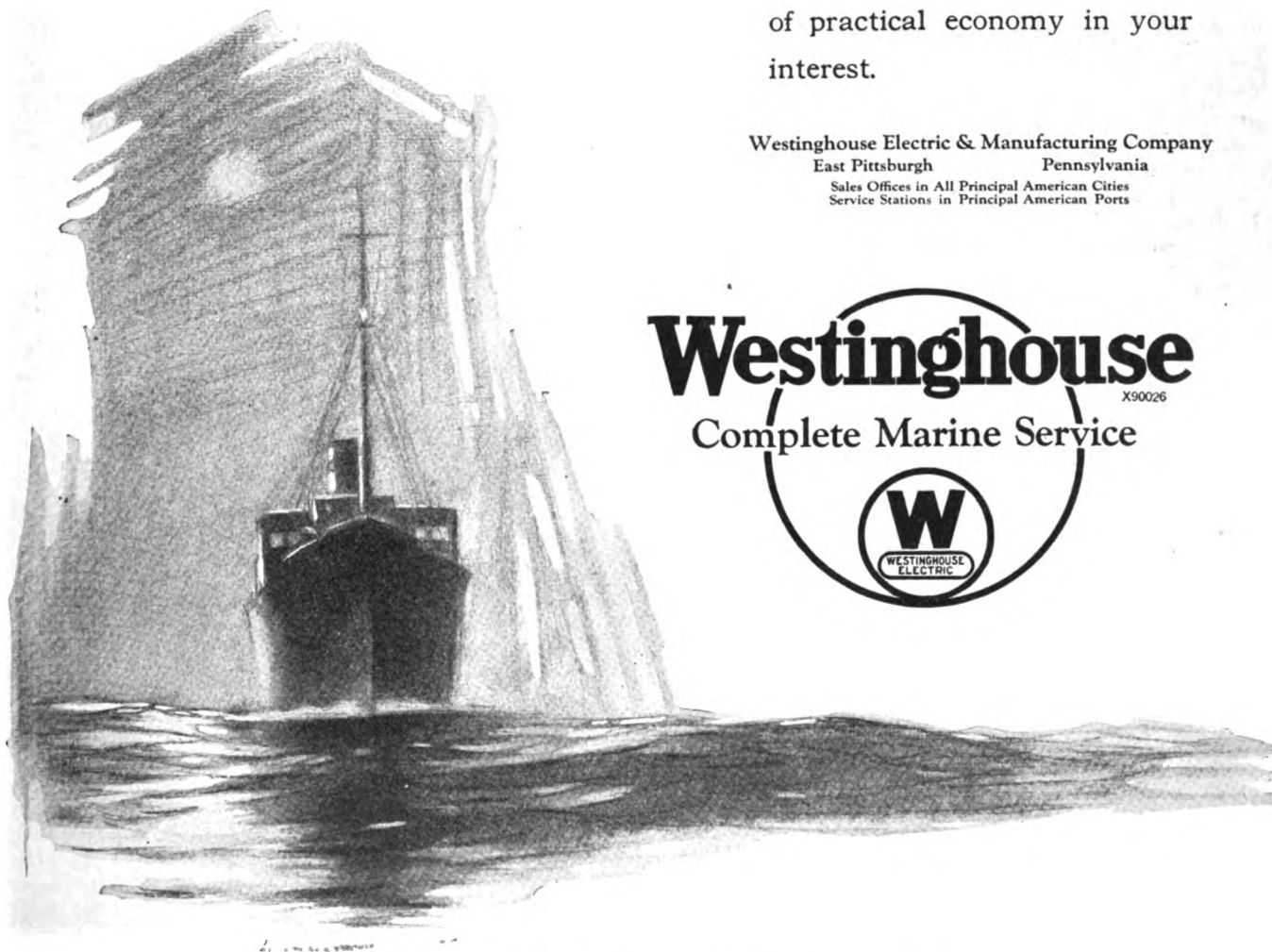
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stored up and used to increase the outflow in times of light rainfall. By means of these regulating works, the levels of the Great Lakes would be stabilized, sanitary district engineers contend. Secretary Hoover's assertion that cement and steel will be the solution of the lake level problem, and that engineers and not lawyers ultimately will solve the issue, is being used to bolster the view that the sanitary district is not responsible for the disturbance over water levels in the Great Lakes shipping industry.

**W** J. SMITH, 140 South Dearborn street, Chicago, has been named general agent for Swane & Hoyt, Inc., ship owners and agents of San Francisco, Seattle, Portland, Oreg., Los Angeles, St. Louis and Chicago. The concern operates the America-Australia Orient line, and other services operating from the Gulf to the Pacific.

**R**ICHARD THORP, son of H. W. Thorp, president of the Goodrich Transit Co., has returned from a trip to Europe. The trip, which was

part of a university-educational tour, occupied about three months.

**T**HE abundant yield of the Michigan fruit belt is likely to develop a considerable increase in fruit shipments on Great Lakes vessels this fall as compared with a year ago. By the middle of September fruit shipments were about equal to those in the corresponding period a year ago, but last year's shipments will be more than matched when the final returns for this season are in, as the 1926 yield has been slower in ripening.

## Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to Sept. 18, 1926 on Future Loadings

NOTE: FREIGHT RATES STEADY AND SOME INCREASE

New York to	Grain	Provisions	Cotton (H. D.)	Flour	General cargo cu. ft.	100 lbs.	Finished steel	REMARKS Freight Offered	From North Pacific Ports to	Lumber Per m. t.
Liverpool.....	3s 0d	\$0.50	\$0.40	0.20	\$0.40	\$0.75	\$7.00T	Fair	San Francisco.....	\$4.50 to 5.00
London.....	2s 6d	0.50	....	0.20	0.40	0.75	7.00T	Fair	South California.....	4.50 to 5.00
Oslo.....	\$0.15	0.45	0.50	0.27	0.42½	0.85	7.00T	Fair	Hawaiian Islands.....	9.50 to 10.50
Copenhagen.....	0.19	0.45	0.40	0.26	0.42½	0.85	7.00T	Fair	New Zealand.....	16.00 to 19.00
Hamburg.....	0.19	0.35	0.40	0.24	0.37½	0.75	8.00T	Very good	Sydney.....	12.00 to 13.00
Bremen.....	0.20	0.35	0.40	0.24	0.37½	0.75	8.00T	Very good	Melbourne-Adelaide.....	12.00 to 14.00
Rotterdam and Amsterdam.....	0.20	0.32½	0.50	0.22	0.35	0.70	7.50T	Very good	Oriental Ports.....	8.50 to 10.00
Antwerp.....	0.09-10-11	0.32½	0.35	0.18	0.35	0.70	7.50T	Fair	Oriental Ports (logs).....	12.50 to 16.00
Havre.....	0.11	0.50	0.35	0.27½	0.40	0.75	8.00T	Quiet	Peru-Chile.....	12.00 to 13.50
Bordeaux.....	0.11	0.50	0.35	0.27½	0.40	0.75	8.00T	Quiet	South Africa.....	16.50 to 18.00
Barcelona.....	....	12.00T	0.30	10.00	—12.00T—	....	8.00 to 15.00T	Fair	Cuba.....	14.00 to 15.00
Lisbon.....	....	0.65	0.40	7.00T	—20.00T—	....	7.00T	Fair	United Kingdom.....	70s to 85s
Marseilles.....	....	0.55	0.30	6.00	—20.00T—	....	5.50T	Poor	United Kingdom (ties)....	70s to 80s
Genoa.....	0.23	12.50	0.40	7.00	—20.00T—	....	10.00T	Fair	Baltimore-Boston range....	\$13.50 to 14.50
Naples.....	0.23	12.50	0.40	7.00	—20.00T—	....	10.00T	Fair	Florida Range.....	No rates
Constantinople.....	0.27	17.00T	0.75	0.40	—20.00T—	....	9.00T	Very good	Buenos Aires.....	14.00 to 15.00
Alexandria.....	....	17.00T	0.75	0.40	—20.00T—	....	9.00T	Very good	Flour and Wheat	
Algiers.....	....	0.75	0.50	0.40	—20.00T—	....	10.00T	Poor	U. K. and Continent	
Dakar.....	....	15.00	....	14.00T	—21.00T—	....	10.50T	Very good	(gross ton).....	30s to 32s 6d
Capetown.....	9.00T	20.00	....	13.00T	—20.00T—	....	11.00 to 18.00T	Very good	Oriental Ports (net tons)...	\$4.00 to 4.75
Buenos Aires.....	....	20.00T	....	....	—20.00T—	....	8.00T	Very good		
**Rio de Janeiro.....	....	22.00T	....	8.00T	20.00 to 22.00T	7.00 to 7.70T	7.00 to 7.70T	Very good		
Pernambuco.....	....	22.00T	....	9.00T	—22.00T—	....	9.70T	Very good		
Havana.....	0.22½*	0.50	....	0.22½*	....	....	4.00*	Fair		
Vera Cruz.....	....	0.30	0.35	0.25	0.52½	1.05	0.30 to 0.35	Good		
Valparaiso.....	....	1.07	....	0.70	0.45	0.80	10.00T	Good		
San Francisco.....	....	0.35 to 0.70	....	0.50 to 1.10	....	....	0.25 to 0.80	Fair		
Sydney.....	....	18.00T	1.25	1.18T	18.00-24.00T	....	9.00-12.00T	Fair		
Calcutta.....	....	....	0.45	10.00T	—16.00T—	....	10.00T	Fair		

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### Principal Rates To and From United Kingdom

	s	d		s	d
Grain, River Plate to United Kingdom...	23	9	Pig iron, United Kingdom to New York or Philadelphia.....	12	6
Coal, South Wales to Near East.....	—	—	Iron ore, Bilbao to Cardiff.....	5	10
Coal, United Kingdom to Buenos Aires...	—	—	Iron ore, Huelva to Phila. or Balto.....	11	6
Manganese Ore, Poti to Philadelphia...	\$3.70	—			

### Bunker Prices

#### At New York

	Coal alongside per ton	Fuel oil alongside per barrel	Diesel engine oil alongside per gallon
Oct. 17, 1925	5.00@6.00	1.70½	5.00c
Nov. 18.....	5.50@5.60	1.70½	5.00
Dec. 18.....	5.60	1.70½	5.00
Jan. 2.....	5.50@6.25	1.75@1.80	5.25
Mar. 18.....	5.60@5.80	1.80½	5.50
Apr. 22.....	5.25@5.60	1.80@1.81½	5.75
May 19.....	5.25@5.60	1.80½	5.88
June 18.....	5.50@5.60	1.80½	6.08
July 20.....	5.00@5.60	1.80½	6.08
Aug. 12.....	5.00@5.60	1.81½	6.10
Sept. 18, 1926	5.45@6.00	1.81½	6.05

#### At Philadelphia

	Coal trim. in bunk per ton	Fuel oil alongside per barrel	Diesel Eng. oil alongside per gallon
Nov. 18, 1925	5.40@5.65	1.71½@1.74½	5.15@5.25c
Dec. 18.....	5.15@5.50	1.71@1.74½	4.84@5.15
Jan. 20.....	5.50@6.25	1.71@1.79	5.00@5.65
Feb. 18.....	5.80	1.78@1.86½	5.14@5.50
Mar. 18.....	5.00@5.25	1.80@1.86½	5.40@5.65
Apr. 22.....	5.25	1.77@1.86½	5.90@5.93
May 19.....	5.25@5.70	1.82@1.86½	6.15@6.38
June 18.....	4.90@5.15	1.80@1.86½	6.15@6.43
July 20.....	5.10@5.50	1.74@1.81½	5.07@6.15
Aug. 12.....	5.00@5.25	1.69@1.74½	5.75@6.17
Sept. 18, 1926	5.00@5.35	1.74@1.74½	6.14½

#### Other Ports

Boston, coal, per ton....	\$7.01
Boston, oil, f. a. s., per barrel.....	\$1.80
Hampton Roads, coal, per ton, f.o.b., piers..	\$5.50-5.75
July 9—Cardiff, coal, per ton.....	—s—d
London, coal, per ton....	—s—d
Antwerp, coal, per ton....	—s—d
Antwerp, Fuel oil, per ton	77s 6d
Antwerp, Diesel oil, per ton.....	97s 6d
British ports, Fuel oil....	72s 6d
British ports, Diesel oil..	87s 6d

NOTE: Lighterage rates on fuel in New York reduced from 6½ to 5½¢ per barrel. Owing to the coal stoppage in Britain no outward freight rates or bunker prices for coal or pig iron are quoted.

General cargo rates to Havana change daily and are omitted for the time being.

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# Reviews of Late Books

*Marine Engineering in Theory and Practice* by Commander S. G. Wheeler R. N.; cloth, two volumes, 182 pages in volume 1, 6 x 9½ inches; published by Crosby, Lockwood and Son, London, and volume 1 furnished by MARINE REVIEW for \$4.00 postpaid and in Europe by the Penton Publishing Co., Ltd., Caxton House, London, for 18 shillings net.

Volume 1 of the work under review here, though intended to be an elementary discussion of the theory and practice of marine engineering, is a complete text book on heat engines and mechanical engineering in connection with them. Steam engines, boilers, turbines, internal combustion engines and auxiliary machinery are covered both in their general application and with particular reference to type used and practice at sea.

There is a special chapter devoted to metals and the strength of materials, written by Lieut. Commander G. C. Malden, R. N., who is lecturer in metallurgy and applied mechanics, Royal Naval Engineering College at Devonport. The ground covered in this book is applicable to engineering in the merchant service as well as the British navy. Where an important principle is elucidated even land practice is sometimes referred to.

This book fills to a worthy extent the real gap in marine engineering literature of recent years. The first volume contains more elementary theory than the second but deals with reciprocating engines and turbines in a practical as well as a theoretical manner. The second volume, while mainly concerned with practice also deals appropriately with theory. The steam turbine is dealt with thoroughly. Internal combustion engines, air pumps, condenser arrangements, and other auxiliary machinery are also fully covered. Treatment of engine room arrangements applicable to the merchant as well as the naval service is discussed. Any marine engineer desirous of improving his own knowledge and experience will find this book of real value.

\* \* \*

*Die Binnenschifffahrt der Vereinigten Staaten von Amerika*, by Dr. Ernst Esch, director of the Institute of Transportation of the University of Cologne. Published by G. A. Gloeckner, Leipzig, Germany. 3 Marks 70. 136 pages. Illustrated. Approximately 6x9 inches. Furnished by MARINE REVIEW for \$2.00 net and in Europe by the Penton Publishing Co.

Ltd., Caxton House, London, for 10 shillings net.

Reviewed by R. S. MacElwee

This concise study of the American inland waterways problems is the result of an extensive trip made by the author through the United States in 1924 and is the first of a series of publications to be expected as the fruit of these firsthand studies. The others will doubtless appear or show their influence in the author's periodical, *Zeitschrift für Verkehrswissenschaft*.

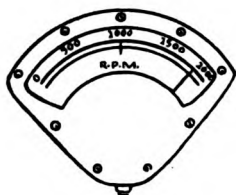
Dr. Esch has condensed into most compact form all of the most essential elements of our extensive inland waterway problem. He has done so with a combination of keen insight and understanding of the prominent features of the subject matter with an orderliness of arrangement that shows a master craftsman in transportation literature. The reviewer himself has indefinitely postponed an effort to produce a volume upon inland waterways because of the apparently hopeless mass of undigested material that he has accumulated. Therefore, he appreciates keenly the ability of his colleague to pick out the essentials and arrange them in an orderly manner in the compass of 136 pages.

Short chapters carry the following captions: History of the development of canal and river traffic. Reasons for the decline of waterborne traffic. Inland water traffic since the middle of the nineteenth century. The great divisions, size of the groups, and totals of volumes of tonnage of inland waterways. Principal inland waterways of the Atlantic Coast, Gulf of Mexico and the Pacific Coast and Central Mississippi. Great Lakes. The river and canal territory of the Mississippi. The river and canal territory of the State of New York. The Federal Government and inland waterways. Private organizations for the promotion of inland waterways. Plans for future extension of the inland waterways of the United States. The tendency toward closer co-operation between inland waterways and railroads. Passenger traffic on inland waterways. Summary of the prospects for the development of inland waterways.

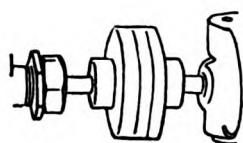
In this portion will be found: Statistics of traffic on rivers of the United States, 1922-23. Statistics of canal traffic in the United States, 1922-23. Collection of photographs. Map of

the United States. Map of the inland waterways of the United States east of the Mississippi. Three pages of bibliography.

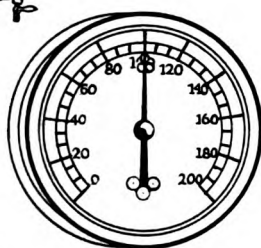
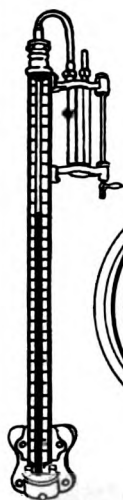
It is regretted that the author has not given us the benefit of more criticism. Here is an opportunity to have the opinions of the director of a school of transportation at a university situated at Cologne, a city which is synonymous with river traffic on a large scale since the early Middle Ages, and past whose gates probably the most efficient system of river commerce flows daily. However, the author's object is to summarize the existing conditions with a few words descriptive of a tendency of development. Also, he probably had some delicacy about expressing too frank an opinion as a guest in a foreign country. Some of the author's remarks, however, are very interesting. For instance, the following on page 74, "Comparatively small development of canal traffic is astonishing in view of the fact that other available means of transportation are no longer in a position to take care of the gigantic growth of the traffic in the country. Especially since, as is the case in most branches of economic life in the United States, these means of transportation are given, not for the common weal, but for their own aims and interests and the competition between them often leads to disadvantages to the shipper. . . . It is difficult to point out in detail the reasons why the canal (the New York barge canal) to date has not reached expectations. To the competition of the railroads, already mentioned on various occasions, might be added the fact of the state operation of the canal which is inimical to a simple and economic business administration." In closing, Dr. Esch says, "The years 1922 to 1924 show plainly the favorable action of a new interest in inland waterways. But it is still too early to prophecy an early realization of a complete success of the present more favorable tendency. But it is true that the time will come when economic principles will accord to inland waterways their proper place. But first, the American people must learn to think independently of the influence of that portion of the public which is financially interested in railroads and to free themselves of the influence of the railroads upon the governmental agencies in Washington. This freedom will only come when the natural resources of the country are no longer so easily obtainable as in the past and when the struggle for daily bread drives the otherwise care-free American to economize."



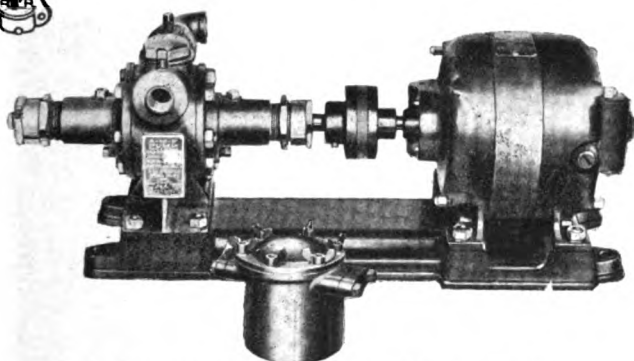
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## Century Old Articles

(Continued from Page 22)

harbor for an indefinite period.

The collection includes many other articles, such as a lead ink well of Revolutionary times, an old metal horse-bit of Spanish design, wooden blocks, copper tea kettles, saucers, pewter plates, spoons, crockery, etc. During the excavation two old ships were dug up on the site, one a 40-foot, oak vessel. Scattered about in the soil were many old rum bottles, some of which are of the squat pattern that was used for spirituous liquor in the earlier Colonial times.

The Midland Barge Co., Midland, Pa., recently delivered a steel harbor float for the Duquesne Light Co., Pittsburgh. The float is 100 feet long 26 feet wide and 4 feet deep. The same company is also building a der-rick boat for the Dillman Egg Case Co., Carrutherville, Miss. A steel

barge was also recently delivered to the Southern Cotton Oil Co., of New Orleans. This barge is 100 feet long, 34 feet wide and 7 feet deep.

There is also under construction at the Midland yard a diesel twin screw tunnel type towboat. This boat is the first of its kind to be built in the Pittsburgh district for export trade. It is being constructed for the General Development Co. of Columbia, S. A. After completion it will be delivered to South America under its own power by the Ohio and Mississippi rivers, the gulf and through the Panama canal.

## Merchant Marine Policy to be Determined

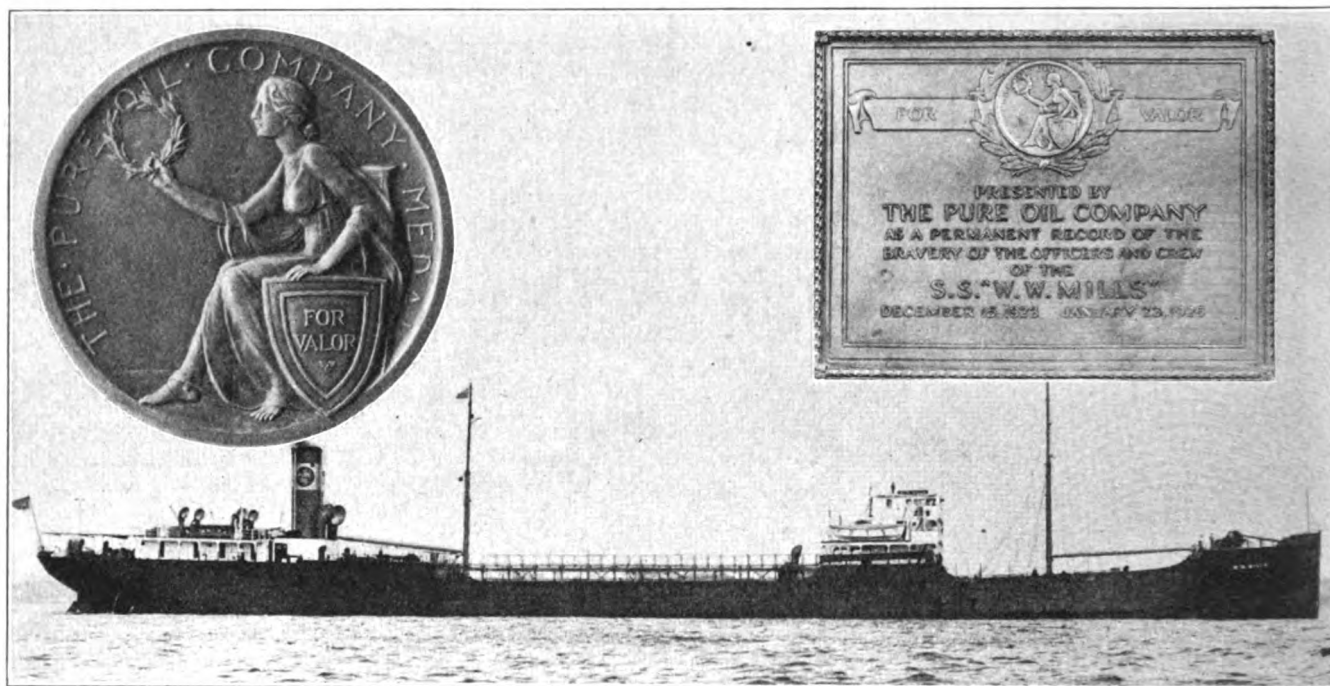
Hearings are to be held in the near future by the merchant marine planning committee of the United States shipping board in connection with a report which is to be made to con-

gress by the board for a permanent merchant marine policy.

While, at the time of this writing, dates have not been announced, it is expected that hearings will be held by the committee at the lake ports some time during October. Hearings are also to be held in other shipping centers throughout the United States.

This committee consists of Commissioners Plummer, Teller and Walsh, all of whom have been at work since congress adjourned preparing a report for congress which was called for by a senate resolution passed at the last session. This resolution, which was introduced by Senator Jones, of Washington, called upon the shipping board to formulate a policy for an adequate merchant marine and designates that the report shall be in the hands of congress not later than Jan. 1, next.

The committee feels, it is understood, that it should get the opinion of the shipping interests of the country.



THE OFFICERS AND CREW OF THE TANKER W. W. MILLS WERE HONORED BY THE OWNERS, THE PURE OIL CO., FOR SKILLFUL AND HEROIC WORK IN RESCUES AT SEA. THE CIRCULAR INSET REPRESENTS THE MEDAL PRESENTED TO THE OFFICERS AND BOAT CREW BY ADMIRAL BILLARD, COMMANDANT OF THE UNITED STATES COAST GUARD. CAPTAINS W. H. MAXWELL AND W. D. EVANS WERE ALSO AWARDED INDIVIDUAL MEDALS

## Visit Liner Building at Newport News

The new Panama Pacific liner building for the International Mercantile Marine Co. at Newport News Shipbuilding & Drydock Co. is now in frame and construction is progressing rapidly. This vessel is the largest yet laid down in an American shipyard. Delivery is expected in October, 1927, and she will be placed on the New York-California run.

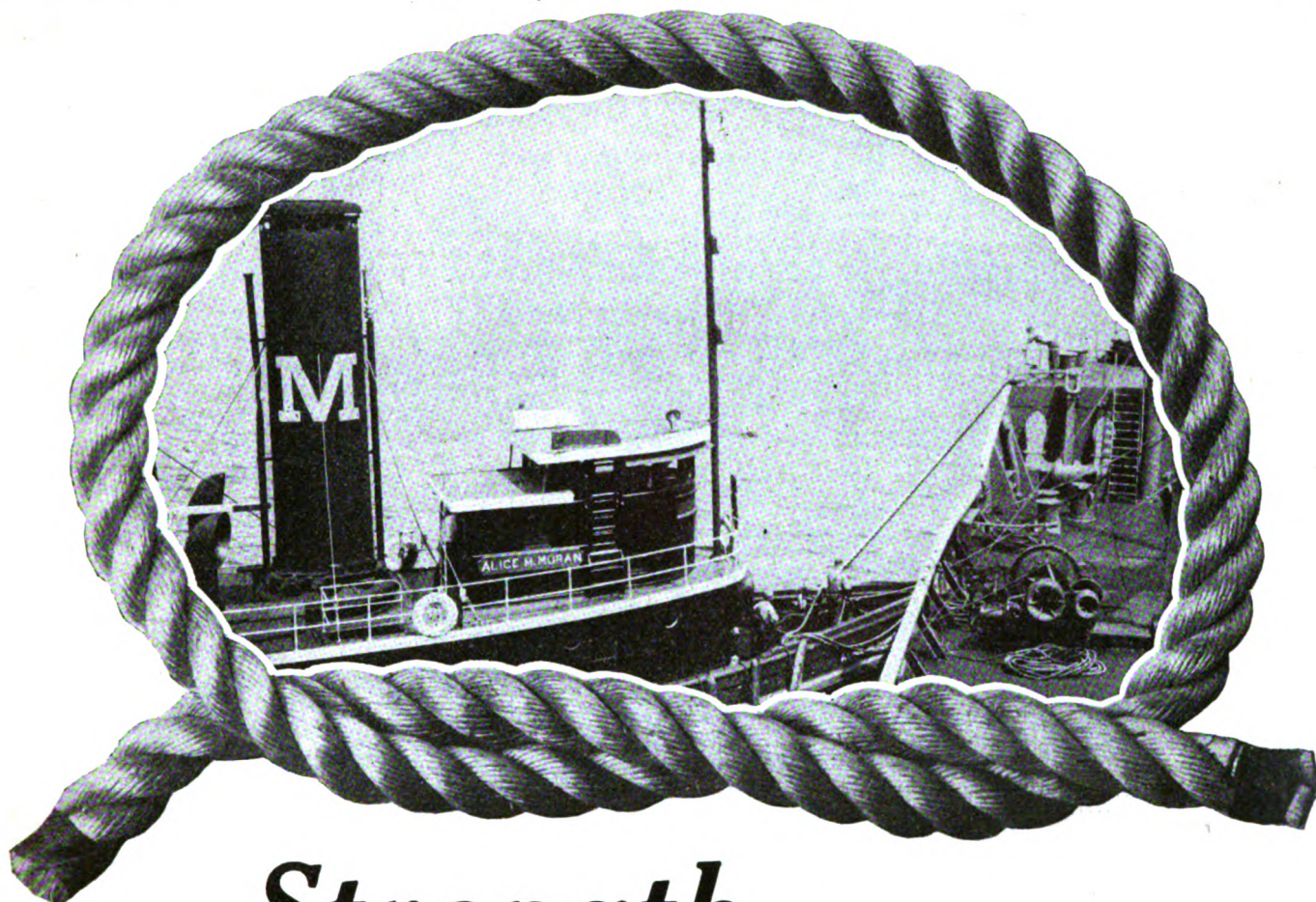
On Sept. 14, President P. A. S.

Franklin of the International Mercantile Marine Co. with John H. Thomas, vice president, A. J. McCarthy, manager of the company's American flagships, and Capt. Roger Williams, operating manager, visited the Newport News shipyard to inspect the progress being made. Interior design and model staterooms, complete in every detail, including furnishings and decorations, as well as structural work on the hull, were inspected by Mr. Franklin and his party. Designs for the ship's turbo-

electric power plant which is to drive the ship at a speed of 17 knots have been completed by the General Electric Co.

The death in Liverpool, Eng., on Sept. 18, of Col. Henry Concannon joint manager and director of the White Star line removes from British shipping one of its outstanding figures. He joined the line in 1888 and was active in its affairs until a day before he died. Col. Concannon was 61 years old at the time of his death.





# Strength-

## Where Strength is Most Needed

**T**HIS is the chief reason why Moran Towing Service is so popular in New York Harbor. Where the job calls for an unusually powerful tug, there you will invariably see one with a big "M" on her stack.

And this is just exactly the same reason why Plymouth Manila Rope is specified by this big towing corporation for its tugboats. They know that where the emergency demands greatest strength, Plymouth Rope can always be trusted.

In addition to its dependability, take into consideration its durability—every user will tell you that Plymouth Rope is not only stronger but also lasts longer than ordinary rope.



*Ship chandlers everywhere  
handle Plymouth Cordage*

PLYMOUTH CORDAGE COMPANY  
North Plymouth, Mass. Welland, Can.

# PLYMOUTH *The Rope You Can Trust*

*Please mention MARINE REVIEW when writing to Advertisers*



TABLE IV

## Sub. Type Vessels Bought by Ford for Scrapping

Name	Design	Location	Year Built	Where Built	By Whom Built
ABLANSET	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
AGAWAM	1023	Norfolk	1918	Newark, N. J.	Submarine Boat Corp.
ALAMOSA	1023	New York	1918	Newark, N. J.	Submarine Boat Corp.
ALCONA	1023	Norfolk	1918	Newark, N. J.	Submarine Boat Corp.
ALLIES	1023	Norfolk	1918	Newark, N. J.	Submarine Boat Corp.
ASABETH	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
BAYHEAD	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
BETHLEHEM BRIDGE	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
BOSTON BRIDGE	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
BRASHER	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
CAMBRIDGE	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
CHARLOT	1023	Philadelphia	1918	Newark, N. J.	Submarine Boat Corp.
CHATTANOOGA	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
CONSORT	1023	Norfolk	1918	Newark, N. J.	Submarine Boat Corp.
CHICAGO BRIDGE	1023	New York	1918	Newark, N. J.	Submarine Boat Corp.
COOK	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
COQUIT	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
COSKATA	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
DADE COUNTY	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
DAVIDSON COUNTY	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
DECATUR BRIDGE	1023	Norfolk	1918	Newark, N. J.	Submarine Boat Corp.
INDEPENDENT BRIDGE	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
INDIANA BRIDGE	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
JACKSON	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
JEFFERSON COUNTY	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
JEYL	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
JOHNSON CITY	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
KOOTENAI	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
LACKAWANNA VALLEY	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
LORDSHIP MANOR	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
MARGUS	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
MASSICK	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
MONOMAC	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
MOOSEHAUSIC	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
ONEKAMA	1023	New York	1918	Newark, N. J.	Submarine Boat Corp.
OPELIKA	1023	Philadelphia	1918	Newark, N. J.	Submarine Boat Corp.
OPEQUAN	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
ORONOKE	1023	New York	1920	Newark, N. J.	Submarine Boat Corp.
PANOLA	1023	Philadelphia	1918	Newark, N. J.	Submarine Boat Corp.
PARKSVILLE	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
ST. JOHN'S COUNTY	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
SHORTSVILLE	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
DELANAV	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
FARABY	1023	New York	1918	Newark, N. J.	Submarine Boat Corp.
FORT PITT BRIDGE	1023	New York	1918	Newark, N. J.	Submarine Boat Corp.
HILLSBOROUGH COUNTY	1023	Norfolk	1919	Newark, N. J.	Submarine Boat Corp.
TOLEDO BRIDGE	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
VINCENNES BRIDGE	1023	New York	1919	Newark, N. J.	Submarine Boat Corp.
WACO	1023	Philadelphia	1919	Newark, N. J.	Submarine Boat Corp.
WHEELING MOLD	1023	New York	1920	Newark, N. J.	Submarine Boat Corp.

NOTE:—Refer to Tables I, II and III for a list of the Lakers bought for scrapping

in the molten metal drawn from the blast furnace before pouring into pigs. A better grade of pig iron is thus obtained.

From June 1, up to Sept. 22, 33 vessels have been completely scrapped at the Fordson plant. Twelve are in process of scrapping at all times. The rapidity with which scrapping is being carried out has necessitated considerable attention to the towing schedule. The present average delivery of vessels at Detroit is 15 per month and 12 vessels are at present being completely scrapped in four weeks, or in 20 working days.

A towing unit consists of two "Lakers" in tow of one tug. Weather permitting the speed is 5 knots. Tows start out from Norfolk, Va., Chester, Pa., or New York bound for Montreal. Canal tugs then take both boats through the 26 locks and canals to Ogdensburg, N. Y. At Ogdensburg Ford's tug BARRALLTON tows the two vessels to Port Dalhousie, the Lake Ontario entrance to the Welland canal. From this point canal tugs again tow each vessel through the Welland canal to Port Colborne. From Port Colborne on Lake Erie Ford's tug the BALLCAMP tows the vessels to the Fordson plant, Fordson, Mich., on the River Rouge.

## Tugs Radio for Instructions

All of the Ford tugs are equipped with wireless and radio the home office at Detroit for instructions. The

## Ford Scraps Ships

(Continued from Page 21)

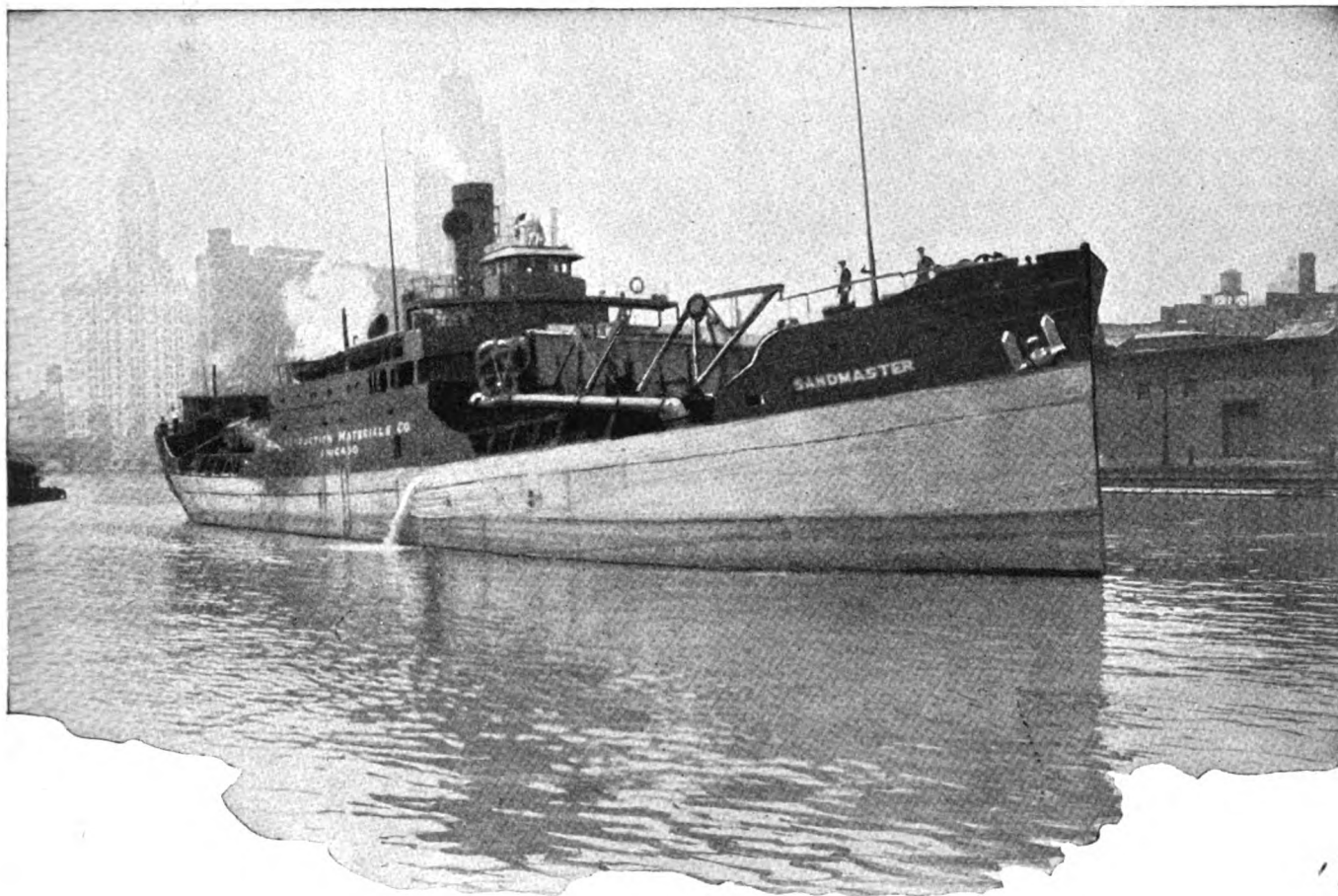
ner and to use them at different Ford branches for supplying power, this amount in many cases being sufficient for all the power needs of such branches. The contract under which these vessels were bought from the government directly prohibits the sale of any machinery of any description or of any other part in its original state. Nothing of any description is being sold in connection with this scrapping program.

## Can Use Steel Scrap

Steel scrap is being used every day at present to the amount of about 400 tons in the open-hearth furnaces. With the mill running at full capacity it is expected that 800 tons of steel scrap a day will be used. The scrap is fed on a conveyor from the car to the shears. At the shears it is cut to charging box size and then lifted by cranes or magnets into the charging boxes and thus into the furnaces. Some scrap steel is also being used in the cupolas of which there are 33. Small quantities of steel is also being used by absorption



CEMENT IN DOUBLE BOTTOM TANKS AND IN INACCESSIBLE PLACES OF THE BOAT HAS PROVED TROUBLESOME TO THE WRECKER—DRILLING OUT CEMENT WITH AIR DRILL AUG. 23, 1926 AT FORDSON



## Diesel-electric—the logical drive for the converted *Sandmaster*

Once more electric power has been applied where its flexibility can be fully capitalized. The *Sandmaster*, operated by the Construction Materials Company for dredging and transporting construction materials, is demonstrating how well Diesel-electric drive fits the needs of a ship which, in addition to propulsion, has work to do that requires power in considerable quantity and applied at several points.

The *Sandmaster* is the first Diesel-electric dredge on the Great Lakes. Her entire electrical equipment was furnished by the General Electric Company.



Each year more ship operators are learning by experience the economic advantages of specifying G-E Equipment throughout.

The main machinery consists of two Diesel-engine generator sets (with direct-connected generators for furnishing excitation, lighting, and power for auxiliaries) and two propulsion motors, which are controlled independently from either the pilot house or the engine room. The motor-driven dredge pumps, which

take power from either or both of the main generators, can be operated when the propulsion motors are also in operation.

All of the auxiliaries are electric. These include the steering gear, pumps, anchor windlasses, mooring winches, suction hoists, jet pumps, and motor-generators for lighting.

2-10

# GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

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office of the Ford plant is in constant touch with all tows enroute, and knows what the weather conditions are and what speed is being made. The arrival of tows at different points along the way can therefore be accurately determined. It is also necessary to keep in mind that it takes the capacity of 2 1/5 "Lakers" to hold the scrap of one of the "Submarine" type boats and the three Atlantic coast shipyards where these vessels

crew of nine men as follows: a captain, an engineer, three firemen and one cook. The Ford tugs are coal burners and carry a crew of 21. A typical tug crew may be listed as follows: captain, chief engineer, first mate, second mate, radio operator, six able seamen, one ordinary seaman, one assistant engineer, three oilers, six firemen, one cook and one mess boy. With good coal the fuel consumption is 18 tons per day. There is a Ford

to the salvager tremendous stocks of large reciprocating engines, turbines, hundreds of large scotch and water tube boilers, dynamos, windlasses, anchors, steering engines, winches, capstans, pumps, tanks, piping, fittings, valves, navigating gear, port light frames, lumber and innumerable other items.

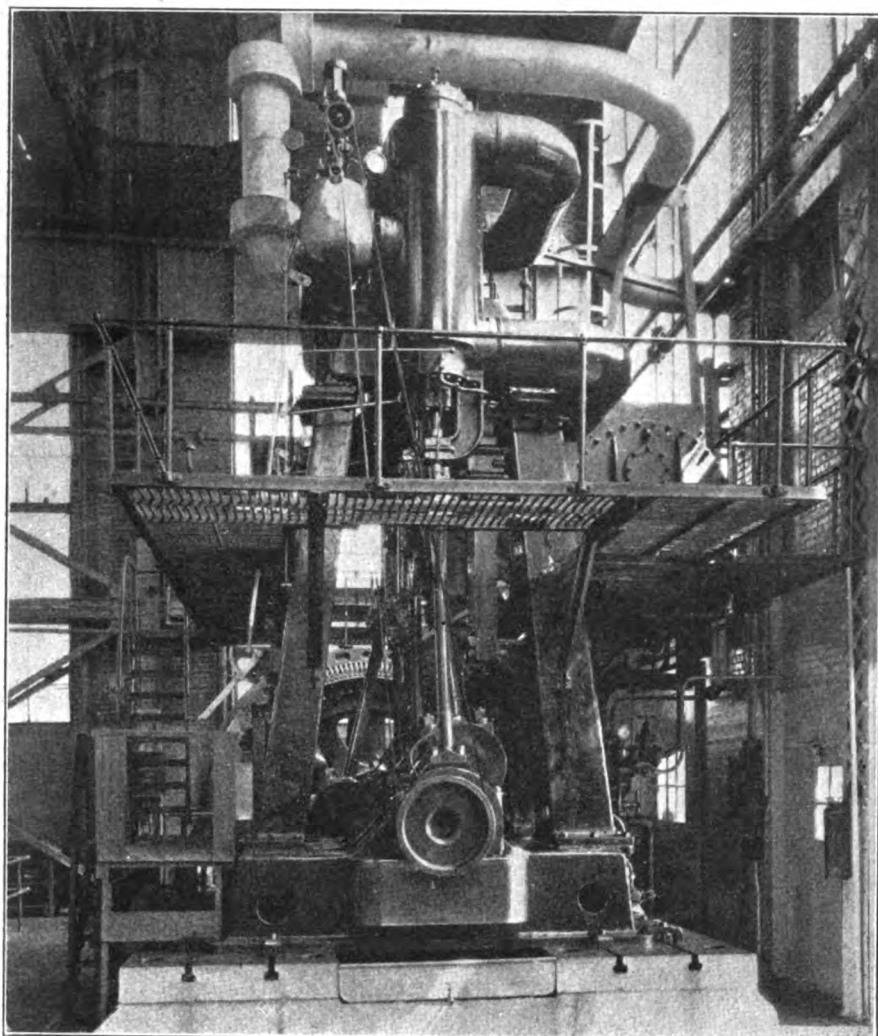
If operations continue at the present rate and if weather conditions are not too severe it is reasonable to expect that the entire program will be completed by the fall of 1927. For the magnitude of the job, it is being carried on with astonishing regularity and speed, due no doubt to careful planning, completeness of equipment and energetic direction.

### Safety Council Meets at Detroit Oct. 25-29

The National Safety council will this year hold its annual fifteenth safety congress at Detroit from Oct. 25 to 29 inclusive. The marine section will be particular importance. W. E. Welch, chairman of this section has appointed A. R. Bush to head the program committee.

Speakers of outstanding prominence in the marine field will discuss all angles of safety in connection with work on ships and docks. Organized safety work is becoming more and more a settled policy among steamship companies and fatal injuries have thus been cut down to a minimum.

Among the speakers and their subjects, are: D. N. Hoover, supervising inspector general, on "Essentials of Maritime Safety;" Lieut. Commodore H. H. J. Benson, United States navy on "The Navy's Contributions to Safety at Sea;" H. H. Raymond, president, Clyde Steamship Co., New York on "General Observations on Marine Safety;" Arthur N. Tode, marine department, Texas Co., New York, on "Ships' Safety Activities of the Texas Co.;" A. D. Reiley, Mutual Life Insurance Co. on "Hazards of the Maritime Industry from the Life Insurance Point of View;" Capt. Irving L. Evans, vice president the United States P. & I. Agency Inc., New York on "The Development of Statistics for the Marine Industry;" Ralph E. Prouty, Aetna Life Insurance Co. on "Safety Engineering Applied to Shipbuilding;" Andrew J. Smith, Marine office of America, New York, on "Protection and Indemnity Insurance;" J. J. Rosedale, consulting engineer, San Francisco, on "Organizing for Safety in the Shipping Industry of the Pacific Coast;" Capt. Asa S. Davison, vice president, Black Diamond Steamship Corp., New York.



THE MAIN ENGINE OF THE LAKE FONDULAC SET UP WITH ORIGINAL SCOTCH BOILERS AS A 1000-KILOWATT GENERATING UNIT IN THE FORDSON PLANT, FORDSON, MICH.

are being scrapped must be supplied with sufficient "Lakers" to carry the current and future scrap. At the present time this is working out so that every ship brought to Detroit comes loaded with 1000 tons of "Sub"-boat scrap.

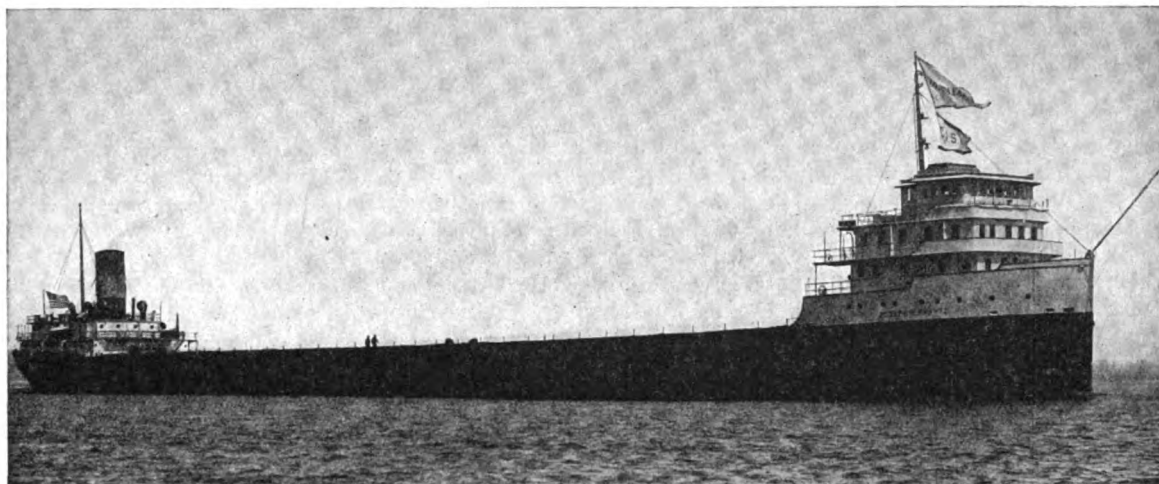
Before the vessel can be towed out they must be sufficiently reconditioned to carry steam on one boiler in order to use the windlass, winches and pumps. They must be stored and quarters must be prepared for the men who are to live on board during the tow. Each vessel carries a

representative in charge at all points where stops are regularly made. Those ships that are to be towed to Detroit are stored and placed in condition by the clerks and mechanics under the man in charge at their point of location.

When this work is completed, over 275,000 gross tons of heavy melting steel will have been salvaged, which after all, with all ten of the open-hearth furnaces working at full capacity requiring 800 tons per day, will be sufficient at this rate for only 344 days. There will also remain

## THE BABCOCK & WILCOX CO.

*Manufacturers of Marine Water Tube Boilers Since 1895*



Steamer "JOSEPH H. FRANTZ", The Columbia Steamship Company

Equipped with  
Babcock & Wilcox Water Tube Boilers and Superheaters

**THE BABCOCK & WILCOX CO.**

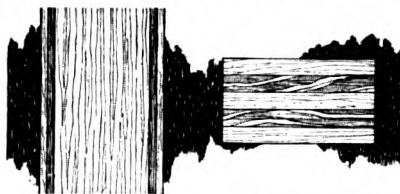
Marine Department  
85 LIBERTY STREET, NEW YORK

# WELDWOOD

Layers of wood welded together  
with a water resistant cement  
for

**Bulkhead Construction  
Ceilings, Walls, Door Panels  
Drawer Bottoms**

furnished in all hard and soft woods. Will not warp or buckle, stands by itself. Requires no backing. Requires  $\frac{1}{3}$  less paint than composition material, by actual test. Low first cost.



5 ply construction of  
Weldwood in hard woods.  
Welded with same water  
resistant cement used in  
U. S. Aircraft propeller  
construction.

5 ply construction of  
Weldwood in soft woods.  
Welded with same water  
resistant cement used in  
U. S. Aircraft propeller  
construction.

Weldwood reduces the weight above the water line. Ample stocks maintained for quick deliveries. Naval architects can choose from stocks at New York and Detroit.

*Technical service of our  
engineers at your service.  
Catalog with prices on request.*

**UNITED STATES PLYWOOD COMPANY Inc.**

603-07 West 36th St.

New York, N. Y.

Please mention MARINE REVIEW when writing to Advertisers



## Build Up Naval Reserve

(Continued from Page 25)

sonnel is in many cases of such a shifting character that its inclusion in the reserve during peacetime is of doubtful value, except possibly a few men in key positions.

### Navy's Plan for Co-operation

The navy's plan for the execution of the merchant marine naval reserve is as follows:

1. The department determines and designates the oceangoing merchant vessels which would be required for service with the fleet with naval crews immediately after mobilization.

2. After consultation with their owners, the department designates from the above list the vessels by name upon which "reserve groups" would be organized, the numbers of such being dependent upon the funds available. In this selection the vessels would be distributed insofar as practicable among as many shipping companies operating large ocean-going vessels as possible, but special consideration would have to be given to certain vessels which have the highest priority in the mobilization plans. The reserve group would normally consist of all the officers serving on board the vessel selected.

3. The commandant of the naval district, in which the home port of the vessel lies, organizes the group and obtains commissions for the officers in accordance with the naval reserve regulations.

4. The senior officer of the group, under the direction of the com-

mandant, supervises the training of the group. While the training methods have not been worked out in detail, it is proposed to utilize study courses covering distinctly naval subjects, such as navy regulations and methods of administration, communications, principles of gunnery and fire control, handling of vessels in convoys and steaming singly in submarine infested waters, and naval engineering. Reserve officers would be required to devote a certain number of hours a month to these study courses and take a brief examination quarterly to qualify for their pay. Subsistence will be furnished officers who volunteer for a cruise without pay on a naval vessel up to fifteen days in duration. Commanding officers of naval vessels have authority to cruise such officers provided they have quarters available.

### Value to Merchant Marine

It is hoped that an appropriation will be secured to pay a limited number of merchant marine naval reserve officers for the fiscal year beginning July 1, 1927.

In addition to being of wartime value to the navy, it appears that the merchant marine naval reserve would be of equal or even greater value to the merchant marine itself during peacetime.

The study courses could not but improve the officer for the performance of his present duties. This applies particularly to the engineer officers, who might effect considerable savings in fuel and other materials by the use of naval engineer-

ing methods developed by many years of intense competition between vessels.

The system of assigning groups to vessels designated by name and of paying officers only so long as they continue to serve on these vessels is certain to improve the stability of their officer personnel. The assignment of officers to these vessels will serve as a reward in that it will give them an opportunity to increase their pay by taking the prescribed study courses.

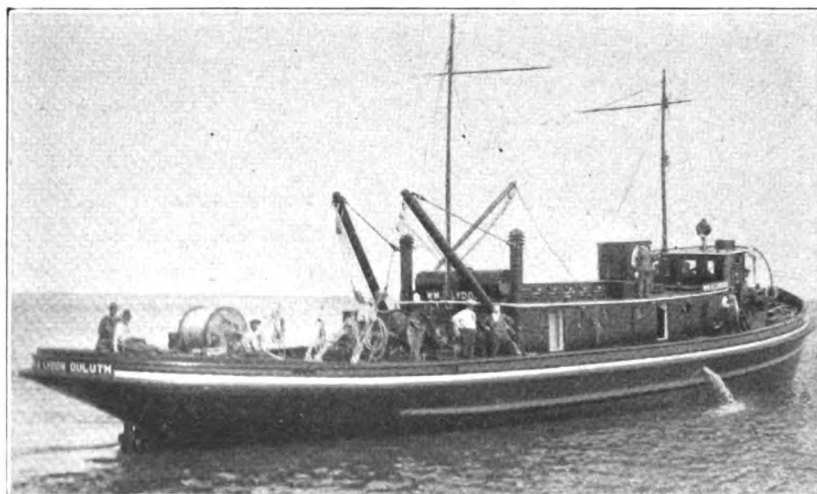
These vessels will also have the right to fly the naval reserve flag, provided the master and fifty per cent of their officers are members of the reserve and this in time may bring a prestige and reputation for efficiency which will be of very real value.

The organization of the merchant marine naval reserve will not create a heavy drain on our national budget. To provide groups of eight officers on one hundred and ten vessels will cost less than \$200,000, and it is not contemplated that this figure will be reached until five years from now, and then only if the navy's complete program is accepted by the budget and congress.

It would appear that at least a part of this program should be made effective in order to give a trial to this system of such potential value to both the navy and the merchant marine.

The Maxim Silencer Co. has removed from 83 Homestead avenue to new quarters in the Capitol building 422 Asylum street, Hartford, Conn.

## Complete Diesel Engined Tug at Manitowoc



*THE accompanying illustration shows the tug WM. A. LYDON recently completed by the Manitowoc Ship Building Corp. for the Great Lakes Dredge & Dock Co., Chicago. This tug is built of steel and is 108 feet long, 25 feet beam and 14 feet deep. It is equipped with a Fairbanks-Morse diesel engine of 750 horsepower burning low grade oil. Bunker capacity is 21,500 gallons. The LYDON is equipped with wireless and has accommodations for a crew of twelve.*

# MARINE DEPARTMENT of

## American Bridge Company

FRICK BUILDING

PITTSBURGH, PENNA.

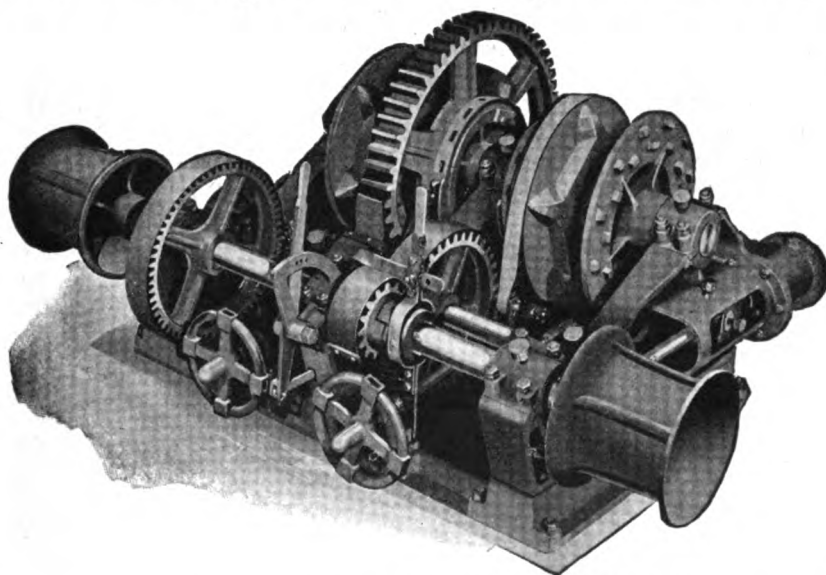
BUILDERS OF

# STEEL BARGES

for RIVERS and HARBORS

# CAR-FLOATS

## The "Superior" Spur Geared Windlass



WE ALSO BUILD

Windlasses  
Steering Gears  
Capstans  
Gypseys  
Winches  
Hoisting Engines  
Swinging Engines  
Power Pawl Posts  
Dredge Deck Engines  
Anchor Hoists  
Scow Winding Gears  
Drill Frame Hoists  
Suction Pipe Hoists  
Steel and Wooden Derricks

Manufacturers of

## Steam and Electrical Machinery

### SUPERIOR IRON WORKS COMPANY

SUPERIOR, WISCONSIN

*Please mention MARINE REVIEW when writing to Advertisers*



## Guns of Old Ironsides

(Continued from Page 24)

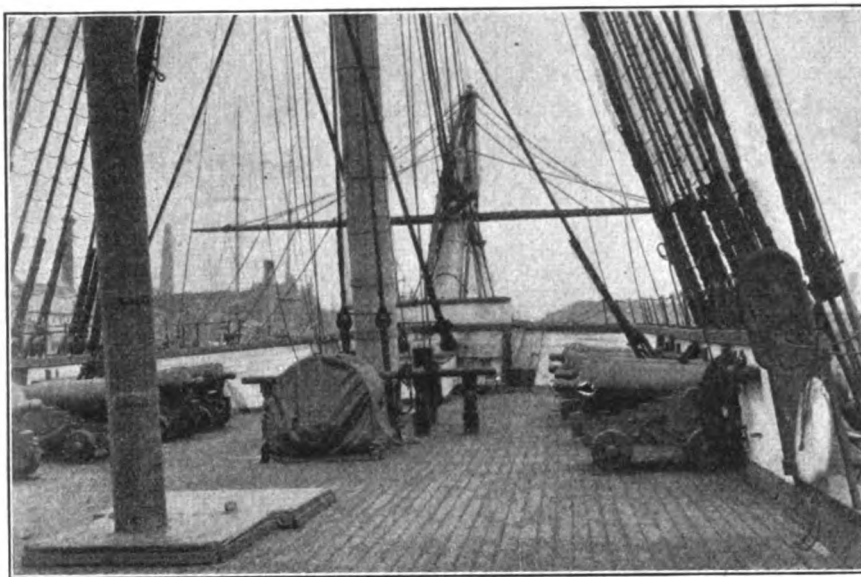
navy department has in its archives, copies of some of "the correspondence with reference to naval matters during the time the affairs of the navy were in the hands of the army." The existence of this correspondence was brought to light subsequent to the writing of the letters already cited. The hope entertained, at that time, was that this correspondence would lead to unearthing some sketches or data that would throw more light on the details of design of the CONSTITUTION'S battery.

It was always possible too, that information about the "proving tests"

"the actual weight of the guns installed is materially less than would appear from a surface inspection." From the information at hand it then appeared that the battery of this vessel, during the War of 1812, was as follows:

30—24 pounders (long) on the gun deck.  
16—32 pounder carronades on the quarter deck.  
8—32 pounder carronades on the forecastle.

This part of the history of OLD IRONSIDES' cannons will be closed by adding that afterward the bureau of construction and repair received an appreciative acknowledgment from Duluth, and with it were several references. All of the books mentioned therein, and many more too, are in the library of the navy department.



SPAR DECK OF THE U. S. S. CONSTITUTION LOOKING FORWARD—EIGHT 32 POUNDERS ARE CARRIED ON THE FORECASTLE AS SHOWN. NOTE THE HEAVY STANDING RIGGING AND SHROUDS WHICH STAY THE FOREMAST

to which these guns were subjected also would become known. This hope was realized, though not as fully as wished, through the receipt by the navy department, of a letter from the former correspondent of the *Scientific American*. This letter repeated much that was contained in the former one. The bureau's reply said in substance, there is "no evidence of the 'excessive weight of the present battery doing injury to the vessel'" and

"Marshall's Practical Marine Gunnery" published in 1822, a copy of which was recently found in that library, will help much to settle many details as to the practice of gunnery in 1800. An excellent illustration of a "carronade" is shown in *The Frigate Constitution*. This thoroughly enjoyable book, written by Ira N. Hollis, is an accurate history of OLD IRONSIDES from 1794 to about 1900.

## Want to Sell U. S. Lines

COMMISSIONER PHILIP S. TELLER, chairman of the ship sales committee of the United States shipping board, on Sept. 17 gave out the following statement:

On Sept. 20, and again on Sept. 27,

an advertisement will be published throughout the country inviting offers for the purchase or charter of the S. S. LEVIATHAN, S. S. GEORGE WASHINGTON, S. S. REPUBLIC, S. S. PRESIDENT HARDING and S. S. PRESIDENT

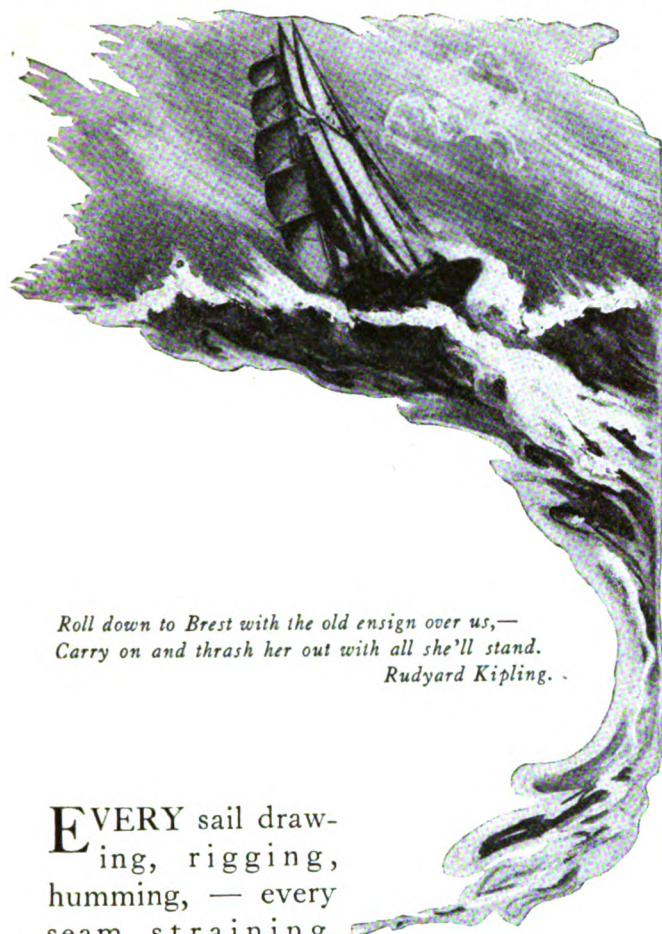
ROOSEVELT, operated by the board on the United States lines, together with the S. S. AMERICAN TRADER, S. S. AMERICAN BANKER, S. S. AMERICAN MERCHANT, S. S. AMERICAN FARMER and S. S. AMERICAN SHIPPER, operated for the board on American Merchant lines.

The board hopes and expects to receive, as a result of this advertisement, a definite indication of the immediate prospect of transferring to responsible private American ownership the services which it is operating, under the requirements of the merchant marine act, 1920. The United States lines, which has just observed its fifth anniversary, has become established as a permanent factor in the important North Atlantic European trade, and the board is inviting offers at this time to determine if the continued maintenance of the service can be insured by its transfer to private American control, under conditions guaranteeing equal or superior service as furnished under shipping board operation, including provision for expansion and replacement as may become necessary.

In the publication of advertisements in the past, it has been the practice of agents for competing foreign lines to refer to the probability of discontinuance of shipping board services if not sold, or the uncertainty of their maintenance if disposed of, and these efforts have been especially directed toward the United States lines. In the present advertisement inviting offers for the United States lines, it is expected that a repetition of such efforts on the part of competing lines will be experienced. These attempts to damage American flag services are especially made at points distant from the shipping centers, where travelers and shippers are likely to be most impressed.

Anticipating any such misstatements or false suggestions, the board announces that the permanence of the United States lines will not be affected in the slightest degree by the invitation for bids. The confidence which has been manifested in the reliability and regularity of this service, as evidenced by the booking of a large volume of business over long periods ahead, will be fully justified. Passages or shipments already arranged, or which may be arranged, will be faithfully carried out, either by the board or by the successful bidder if an award is made. Any change in the service will be solely by way of improvement; if possible, through private operation and if not possible, through operation by the board.





Roll down to Brest with the old ensign over us,—  
Carry on and thrash her out with all she'll stand.  
Rudyard Kipling.

EVERY sail drawing, rigging, humming, — every seam straining, crowding to get the last knot of speed—a mighty test for caulking.

Does she spread, and spring a leak?  
No, sir, for there's

## STRATFORD OAKUM

well-caulked in her seams.

Stratford Oakum has been the choice of the experienced for nearly a century. The best shipyards and repair yards use it, for a Stratford seam is caulked right and stays tight.

Do not accept a substitute. There is none "just as good".

**GEORGE STRATFORD OAKUM COMPANY**

Jersey City,  
New Jersey.

Also manufacturers of Cotton Wiping Waste

\*

## Lundin Life Boats Saved Crew of Antinoe

### Modern Inventions Save Crew Wireless, Radio Compass and Lundin Life- boats Enable Rescuers to Reach the Antinoe.

Without the inventions of the twentieth century the crew of the British freighter Antinoe, who were rescued last week by the United States liner President Roosevelt, would have perished.

**Lundin Boat Almost Unsinkable.**  
The Lundin boat, which is still regarded with suspicion by older seamen, is an all metal, broad, shallow life boat, so buoyed up with air tanks as to be almost unsinkable. It cost Capt. Fried of the President Roosevelt six Lundin boats to save the Antinoe's crew. He attempted to use one of the other types hanging on the davits. This is an endorsement so sincere and from such an authoritative source that the Lundin may be accepted universally as the lifeboat for the heaviest seas.

In rescuing the sailors of the Italian freighter Ignazio Florio two months ago Capt. Greeting of the President Harding also used Lundins exclusively.

Chief Officer Miller, when he arrived in Queensstown, spoke with unrestrained enthusiasm of the Lundin boat, and one of the Roosevelt's passengers, a veteran of many crossings, insisted that no other type of lifeboat could have lived in the waves between the American and the British liners.

From New  
York Sun.  
Feb. 1,  
1926.

"THE Lundin boat is an all metal, broad, shallow lifeboat, so buoyed up with air tanks as to be almost unsinkable. Capt. Fried of the President Roosevelt attempted to use none of the other lifeboats hanging on the davits and without the LUNDIN LIFEBOATS, an innovation of the last decade, Capt. Fried might have been forced to stand powerless on the bridge and watch the freighter go down with all hands.

This is a sincere and authoritative endorsement that the "Lundin" may be accepted universally as the lifeboat for the heaviest seas.

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## Welin Davit & Boat Corp.

305 Vernon Ave., Long Island City, N. Y.

Please mention MARINE REVIEW when writing to Advertisers



## British Are Doing

(Continued from Page 46)

This is effected by the use of a Gill axial-flow pump with a syphon shaped transfer pipe and a special vaned type discharge valve. The operation consists of taking up water from a bell mouth inlet opening flush with the bottom of the boat on one side of the center line of the hull, by means of a screw pump of the vertical spindle type and passing this water through a short syphon pipe set athwart ships to a vaned deflecting valve which discharges the water almost horizontally beneath the boat on the other side of the center line in any direction desired by the steersman.

## Get Cement Cargoes

(Continued from Page 29)

parts to the screen frame a shaky motion which seems to be admirably suited to this purpose.

This scheme of cleaning sacks and then reclaiming the cement about

inally sacked. When the new cement sells at \$2.70 a barrel, the reclaimed cement sells at about \$2.00 a barrel.

Although a commercially operating property, one of the principal objects of the Tidewater Terminal Co. is to build up the commerce of the port of Boston as a whole. This, of course, is good sound business as increased port traffic means increased traffic for the Tidewater company. The close association of the company with the interests of the port, however, is shown by the personnel of its board of directors. Of the five directors, four are Boston men: Joseph W. Powell, chairman of the board of governors of the Maritime association of the Boston chamber of commerce; Frank S. Davis, manager of the Maritime association; George S. Lovejoy, and Harry H. Wiggin. The pier itself is under the management of Capt. J. M. Hoffman, and the Tidewater Terminal Co. is headed by its president, Harvey C. Miller, Philadelphia. At the time the Terminal company was organized by Mr. Miller in 1922, the mayor of Boston, together with

of the property at Boston was made.

The government is frequently accused of entering in competition with private business. T. V. O'Connor, chairman of the shipping board, has explained that the Boston Tidewater Terminal Co., under instructions from the shipping board, is restricting the use of the pier to incoming and outgoing cargoes in order not to compete with private capital invested in warehouses and upon which federal, state and municipal taxes are paid.

The storage of cement, paper, wood pulp, pig iron and similar commodities is carried on with the co-operation of the American Warehousemen's association. In nearly all cases the commodities now handled were not previously handled by any other pier at Boston.

Prices and delivery service of cement handled over the pier are said to be a distinct advantage to the building industry of Boston and surrounding country.

As a purely dock problem the addition of cement trading has utilized space and facilities not otherwise required, and has contributed largely to the profitable operation of the whole property.

## August Lake Levels

The United States lake survey reports the monthly mean stage of the Great Lakes for the month of August as follows:

Lakes	Feet above mean sea level
Superior .....	600.98
Michigan-Huron .....	578.59
St. Clair .....	574.01
Erie .....	571.30
Ontario .....	244.99

Lake Superior was 0.12 foot higher than in July and it was 0.54 foot lower than the low August stage of a year ago. Lakes Michigan-Huron were 0.06 foot higher than in July and were 0.15 foot higher than the low August stage of a year ago. Lake Erie was 0.08 foot higher than in July and it was 0.22 foot higher than the low August stage of a year ago. Lake Ontario was 0.21 foot lower than in July and it was 0.09 foot higher than the August stage of a year ago, 1.30 feet below the average stage of August of the last ten years.

Charles H. Bedell, consulting engineer for the Electric Boat Co., Groton, Conn., died on September 2, following an operation for appendicitis. He was born Dec. 19, 1861 and attended Haverford college Philadelphia and John Hopkins University, Baltimore.

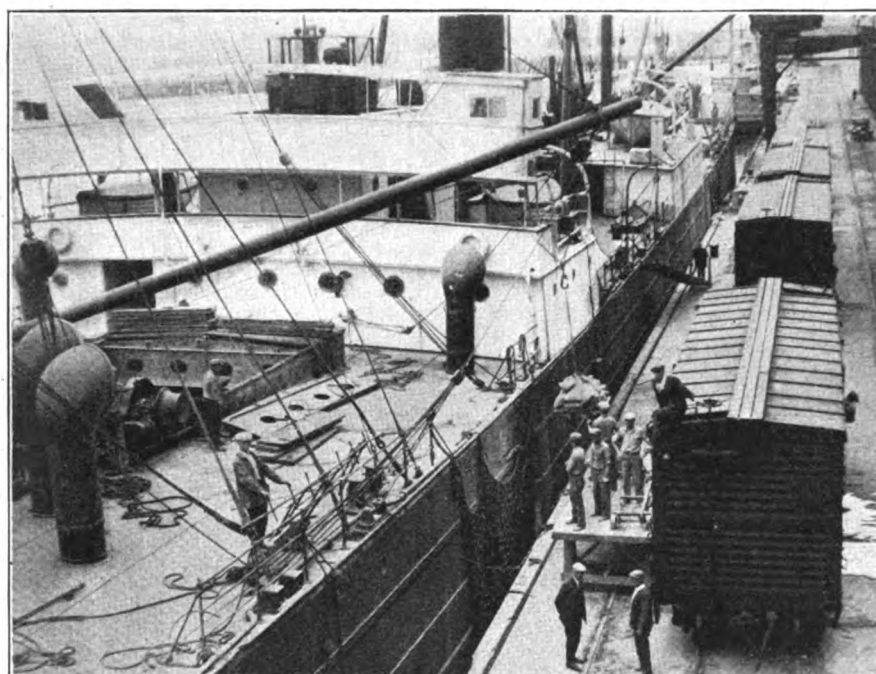


FIG. 5—TRANSFERRING CEMENT IN BAGS DIRECT FROM SHIP TO CARS AT THE BOSTON TIDEWATER TERMINAL. THERE ARE 16 MILES OF STANDARD GAGE TRACK ON THE PIER WHICH GREATLY FACILITATES FREIGHT CAR HANDLING

pays for itself. That is, the cement recovered pays for the labor charge and something towards the overhead. It has been found that when using French sacks which are heavier than the American, but not as heavy as the Norwegian, 2700 empty sacks will produce  $3\frac{1}{2}$  barrels or 14 full sacks of cement. This reclaimed cement is sold at a lower price than that orig-

the Boston chamber of commerce, had been endeavoring for some time to lease the property to private interests for port terminal purposes. Their efforts, however, were unsuccessful. Mr. Miller at this time was operating a similar government pier at Philadelphia with particularly favorable results, and it was on this record, largely, that the lease to Mr. Miller

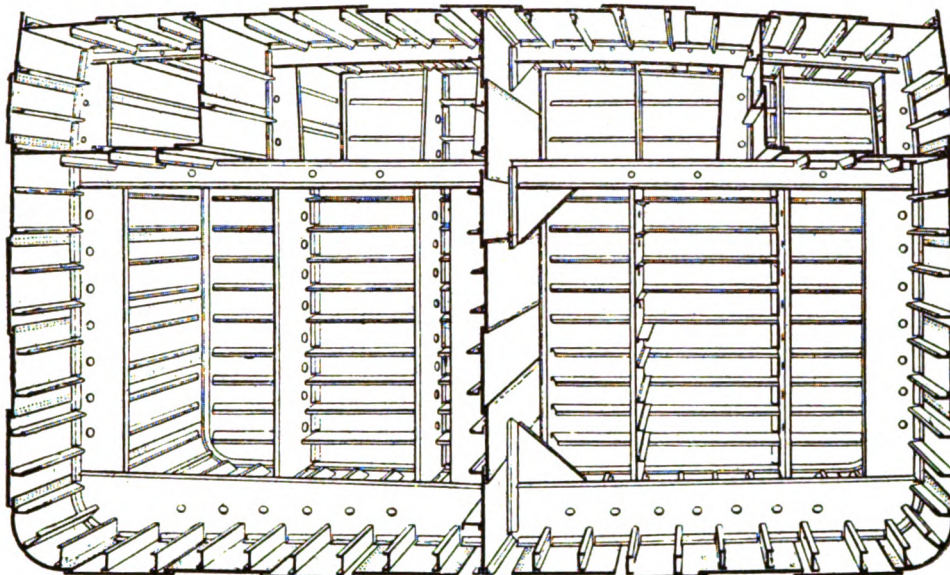


# Progress in Oil-Tank Ship Construction

## THE "BRACKETLESS—SYSTEM"

(PATENTED)

Eliminates Bulkhead Brackets. Eliminates Bulkhead Leakage. Greatly simplifies construction. Greatly reduces cost of upkeep and cost of damage repairs. Greatly reduces cost of cleaning tanks. Substantially increases the longitudinal strength beyond the well-tried "Isherwood System."



For Particulars Apply

**Sir Joseph W. Isherwood, Bt.** 17 Battery Place, New York and  
4, Lloyd's Avenue, London, E.C. 3

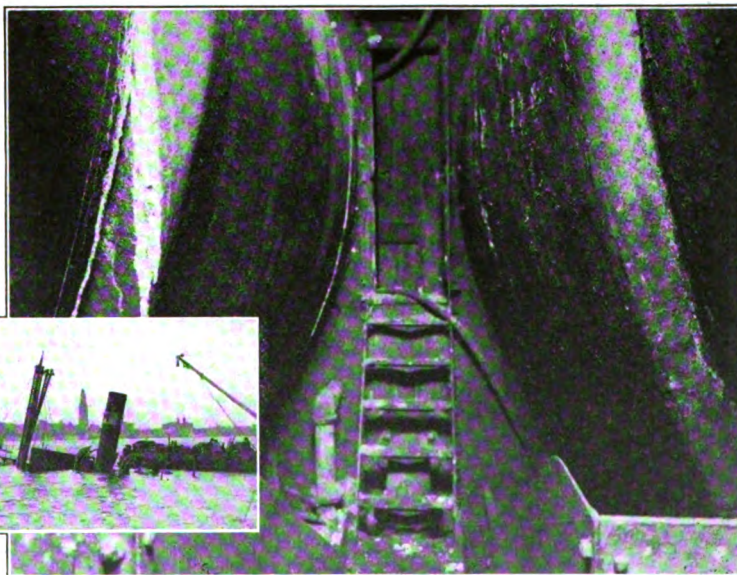
## Thorkote Cement or Plastic

*gives perfect protection against corrosion*

A new product—Thorkote—now opens up a new era in the deposition of asphalt coatings. It eliminates heating and cut-backs or solvents, both of which destroy some of the natural properties of the asphalt.

Thorkote is pure asphalt in a new form—emulsified in water. The asphalt is broken up into minute particles (1/5000 to 1/10,000 inch in diameter) in the presence of an inert mineral colloid which emulsifies it with the water. Thorkote is furnished in the form of Cement or Plastic, and may be applied by brush, trowel, or spraying. The water evaporates and the pure asphalt particles coalesce to form a coating having all the elasticity, ductility and pliability that make asphalt an unrivalled means of permanent protection.

Thorkote users include some of the most prominent ships afloat. List furnished on request.



S. S. Edward Pierce went down in Boston Harbor in 1924. In going down, her bulkheads gave way, causing the cargo of coal to pour into the boiler room. After raising her, it was found that in spite of the water and the abrasion caused by the coal, the 85% magnesia coating of the boilers (covered with Thorkote) were absolutely unimpaired, as the illustration shows.

**The Thorkote Products Co., Inc.**

135 Liberty Street,  
New York City.

Please mention MARINE REVIEW when writing to Advertisers



# Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—  
A Record of Collisions, Wrecks, Fires and Losses

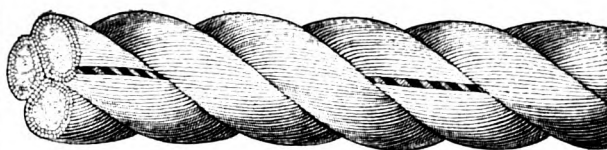
NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
Augusta Leonhardt	July 15	Aground	Miami	Floated	Hawaiian	July 14	Collision	Port Angeles	Plates;
Absecon	July 25	Aground	Pollock Rip Shoal	Floated	Helen Barnett Gring	Aug. 9	Disabled	Bermuda	frames; stanch.
Anseldo San Giorgio II	July 27	Disabled	Hillsborough	Rudder	Homeside	July 19	Collided crane	Emden	Tank
A. F. Coats	Aug. 2	Fire	Ponce	Total loss	Hesione	July 22	Fire	Montevideo	Funnel;
Aroak	July 6	Collision	Solway Firth	Damaged	Iron Queen	July 17	Squall	Off N. J. Coast	bridge
Agnes	July 8	Ashore	Nr. Altona	Floated	Invicta	July 14	Collision	Off West Wool-	Sank
Aylestone	July 9	Stranded	Fernando Noronha	Not stated				wich	Starboard
Annemarie	July 12	Fire	Malmö	Cargo	I. D. S. Adolphe	July 21	Collision	Tilbury Dock	quarter
Agility	July 15	Struck pier	Great Yarmouth	Damaged					Starboard
Agwismith	Aug. 6	Disabled	Charleston	Engine	Invertyne	July 27	Collision	South Shields	side
Albert E. Watts	Aug. 6	Aground	Bolivar Channel	Floated	J. S. Ashley	July 18	Aground	Off Buffington	Foremast
Anfitrite	July 27	Collision	Genoa	Not stated	John Carroll	July 12	Fire	New York	Considerable
Aspo	July 24	Struck sub. object	Lynn	Leaking slightly	Julia Luckenbach	July 19	Aground	Kalama	Floated
					Josiah B. Chase	July 16	Aground	Nr. Beacon 14	Floated
Ball Brothers	July 15	Aground	Round Island	Floated	Jeanne D'Arc	July 1	Struck bank	Brunswick	Floated
Brulin	July 15	Collision	Lake St. Louis	Not stated	Kerhonkson	July 24	Aground	Queenstown	Floated
B. Lyman Smith	July 23	Fire	Sandusky	Plates	Kapriano	July 24	Ashore	South Brothers Island	Floated
Birk	July 8	Collision	Hamburg	Cargo	Kooringa	July 16	Fire	Off Cape Schanck	Total loss
British Birch	July 7	Collision	Crosby Channel	Not stated	Lincoln	July 9	Collision	Off Cape Cod	Considerable
Buckler	July 7	Collision	Fish Quay	Not stated	Lubrafal	July 13	Explosion	Panama	Engines
Benarty	July 9	Collision	Off Folkestone	Bow	London	July 9	Collision	Barrow Deep	Starboard
Bluebell	July 12	Collided bridge	Thames	Sank				side	
Brilliant	July 15	Collision	George's Channel	Not stated	Louisiana	July 15	Aground	Point Indio	Floated
Ball Brothers	July 19	Aground	Round Island	Floated	Lord Broughton	July 23	Fire	Montevideo	Bunkers
Burnside	July 21	Stranded	Nr. Forth Bridge	Floated	Lydia	July 22	Aground	Kiel	Floated
Baronesa	July 28	Aground	La Plata	Floated	Linoria	July 26	Aground	Piræus	Floated
Blanche Forsey	Aug. 8	Ashore	Blanc Sablon	Floated	Mount Evans	July 15	Ashore	River Clyde	Not stated
City of Toledo	July 22	Struck dock	Sandusky	Bow	Mana	July 14	Ashore	Point Wells	Floated
Cubano	July 19	Fire	London	Not stated	Mauretania	July 27	Disabled	Southampton	Propeller
Crudoil	July 18	Aground	Newsons Rock	Floated	Manhattan Island	July 25	Aground	St. Helen's	Floated
Calypso	July 2	Aground	Nr. Killingholm	Not stated	Michael	July 8	Aground	Sligo River	Floated
C. C. West	July 31	Disabled	Manitowoc	Boiler	Meteor	July 14	Stranded	Off Block Island	Waterlogged
Cora F. Cressy	July 26	Collision	Off Newport News	Not stated	Monaleen	July 14	Disabled	Belfast	Engine
Choctaw	July 23	Ashore	Guanica	Not stated	Mount Evans	July 15	Aground	Bowling	Floated
Cordillera	Aug. 3	Collision	Glasgow	Badly	Molly	July 25	Disabled	Nr. Camber	Engine
Claifton	Aug. 3	Collision	Glasgow	Not stated	Nile	July 13	Disabled	Genoa	Machinery
Cisil	July 9	Ashore	Oskarshamn	Rudder; propeller	Newport	July 6	Fire	Portland	Considerable
Cooma	July 9	Ashore	N. E. of Rock-hampton	Considerable	Najade	July 8	Ashore	Nr. Heligoland	Floated
Corcove	July 15	Collision	Gravesend	Not stated	Nicoline Macask	July 21	Aground	Havana	Bottom;
Cubore	Aug. 8	Disabled	Off Smiths Point	Machinery					plates; deck
Cairnglen	July 27	Collision	South Shields	Not stated	Orleans	July 30	Collision	Off Atlantic Docks	Not stated
Cassard	July 28	Collision	Newport	Not stated	Odland I	July 15	Ashore	Nr. Brockville	Not stated
Clare	July 28	Sank	Humacao	Not stated	Ostroboetnia	July 27	Disabled	Cuxhaven	Leaking
Dover Maru	July 13	Collision	Yokohama	Damaged	Penobscot	July 1	Collision	Norfolk	Badly
Dansborg	July 16	Aground	Thimble Shoal Channel	Floated	Petrel	July 30	Disabled	Brooklyn	Engine
Dimitrios N. Boulgaris	July 8	Collision	Gravesend	Not stated	Port Kembla	July 9	Ashore	San Salvador	Bottom;
Diana	July 14	Collision	Off West Woolwich	Damaged	Poppy	July 8	Aground	Pegwell Bay	port side
Emma L.	July 15	Collision	Lake St. Louis	Sank-raised	Persian Prince	Aug. 9	Disabled	Halifax	Floated
E. C. Pope	July 20	Disabled	Nr. Bar Point	Engine	Pena Rocias	July 16	Struck Dock	Liverpool	Machinery
Ecola	July 20	Disabled	Kobe	Waterlogged	Pompei	July 21	Sank	Off Bastia	Port Bow
Echo	July 1	Collision	Kiel	Not stated	Patria	July 28	Struck bank	Nr. Brunsbuttel-koog	Propeller
E. H. Russel	July 24	Collision	East River	Port side	Peer Gynt	July 28	Struck pierhd.	Limerick	Stern
Ethel	July 8	Collision	Thames	Not stated	Queen Alexandra	July 23	Collision	Ardlammont Point	Bow
Emilie Delmas	July 18	Collision	Dakar	Not stated	Rita	July 1	Collision	Kiel	Not stated
Erissos	July 19	Hvy. weather	Not stated	Deck	Reiyo Maru	July 1	Struck rocks	Nr. Amatig. Aleutian	Forepeak
Eva Annie	July 21	Sank	Buxey	Raised				Staten Island	
Ethelene	July 21	Collision	Tilbury Dock	Not stated	Rudolph Bros.	Aug. 1	Sank		
Elwick	July 28	Collision	Nr. Elbe Three Lightship	Leaking	St. Hilda	July 19	Ashore	Tampico	Floated
					Steelvender	Aug. 2	Collision	Lorain	Damaged
Francis E. House	July 20	Collision	Soo river	Plate	Selwyn Eddy	July 26	Disabled	Newport News	Crank shaft
Francis L. Reichert	July 7	Ashore	Sunken Meadows	Floated; considerable	San LeonarJo	Aug. 3	Collision	Not stated	Starboard
								bow	
Fram	July 28	Collision	Kills	Afterpeak	Slane's Castle	July 15	Collision	Rockabell light	Floated;
Frances Boutilier	Aug. 2	Explosion	Off Labrador	Total loss	Saginaw	July 14	Collision	Port Angeles	plates
Frieda	July 7	Collision	Gulf of Mexico	Not stated	Sudawonco	July 2	Aground	Port Arthur	Sank
Fanny	July 21	Collision	Wapping	Sank	Sakigake Maru No. 3	July 27	Stranded	Kurile Islands	Floated
Fritz Schroeder	July 27	Sank	Geestemunde	Not stated	Sherwag	Aug. 9	Fire	Mobile Bay	Sank
									Considerable
Guardian	July 22	Fire	Lima	Cargo	Tyrone	Aug. 2	Aground	Toledo	Floated
Gov. John Lind	Aug. 2	Aground	Hedge Fence Shoal	Floated	Torhamvan	Not stated	Aground	Strait of Canco	Floated;
Godfried Bueren	Aug. 2	Ashore	River Ems	Floated	Taltal	July 8	Collided quay	Valparaiso	plates
Girasol	July 7	Ashore	Barrow Sands	Floated	Treasure	July 8	Ashore	Spurn Point	Stem; plates
Gaslight	July 7	Collision	Fish Quay	Not stated	Trewellard	July 27	Collision	Genoa	Floated
Gretchen Muller	July 7	Ashore	Nr. Wick	Floated	Vassilios	July 6	Stranded	Black Sea	Bow plates
Gannet	July 15	Collision	Gravesend	Foundered; raised					Strdrd side;
					W. C. Franz	July 25	Ashore	Nr. Cove Island	engines; boilers
Germaine L. D.	July 15	Struck pier	Brunswick Dock	Plate; stanchions	Wenchita	July 25	Aground	Parigian Island	Floated
					West Faralon	July 26	Ashore	Vries Island	Floated
Gaelic Prince	July 10	Collision	Valentia	Sank	Willhilo	Aug. 10	Collision	Nr. Aberdeen	Leaking
Harry R. Jones	July 20	Collision	Soo river	Peak; stem	Yosemite	Aug. 2	Struck dock	Duluth	Rudder
Hibiscus	July 14	Fire	Ulmer Park	Considerable	Yonan Maru	July 31	Disabled	North Pacific	Shaft
Home	July 16	Ashore	Cape Cove	Floated	Zenobia	July 8	Collision	Gravesend	Foundered
Hakuho Maru	July 26	Aground	Nr. Mera	Floated	Zinovia	July 26	Aground	Piræus	Floated
Hitherwood	July 27	Struck iceberg	Nr. Cape Spear	Leaking					
Helene	Aug. 2	Struck sub. object	San Francisco	Waterlogged					
H. B. K. 564	July 12	Collision	Hamburg	Waterlogged					
Hela Naval	July 13	Stranded	Mount's Bay	Floated					
Hillbrook	July 14	Stranded	Montreal	Floated					
Horace Luckenbach	July 11	Collision	Columbia River	Deck; beams					

# FIBORE

(FIBRE CORE)

## MANILA ROPE

Patented June 23, 1925; Oct. 20, 1925; Aug. 3, 1926.



FIBORE is unquestionably the strongest and most efficient type of large cordage ever developed.

To the ship owner or operator FIBORE means added **insurance**. It means less delay in operation and greater safety for personnel and equipment.

To the purchasing agent FIBORE means an opportunity for **saving**, with increased efficiency.

To the ship captain FIBORE means **dependability**. It means more "sea-way" or "give." It means greater reserve strength for emergencies and bad weather. It means a better satisfied crew because they no longer have to "fight" their lines into place.

To the man on deck FIBORE means less work with greater safety and comfort.

Our patented WATERFLEX treatment renders FIBORE thoroughly **water-resisting**, permanently lubricated, and flexible—*wet or dry*.

A WATERFLEX FIBORE hawser will far outlast an ordinary line.

It is a recognized fact that a large percentage of ordinary rope does not *wear out*—it actually **rots out** because it cannot resist dampness, rain or water submersion as WATERFLEX FIBORE does.

No additional charge is made for the WATERFLEX feature.

FIBORE construction is thoroughly protected by basic patents in the United States and foreign countries, and can be identified by the orange and black "Twinyarn" marker appearing on the outside of one strand.

*Write for descriptive FIBORE folder.*

**WHITLOCK CORDAGE COMPANY**  
46 South Street. New York

Factory and Warehouse  
Jersey City, N. J.

Branches  
Chicago, Boston, Kansas City  
and Houston



## Build Any Boat!

THIS powerful Diesel tug has just been completed by us for the Great Lakes Dredge and Dock Company of Chicago. The WM. A. LYDON is 108' 0" in length, 25' 0" beam, and 14' 3" depth, and modern in every respect.

No matter what your requirements may be we can serve you. Manitowoc has complete facilities for designing and building steel passenger and freight vessels, carferries, Diesel ships, dredges, tugs, lighters, dump scows, car floats, marine engines and boilers, windlasses, winches, steering engines and all ship auxiliary equipment.

Then too, Manitowoc offers repair facilities backed by an experienced organization and well equipped plant that will insure prompt dispatch on all kinds of ship, engine and boiler work.

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# Late Flashes On Marine Disasters

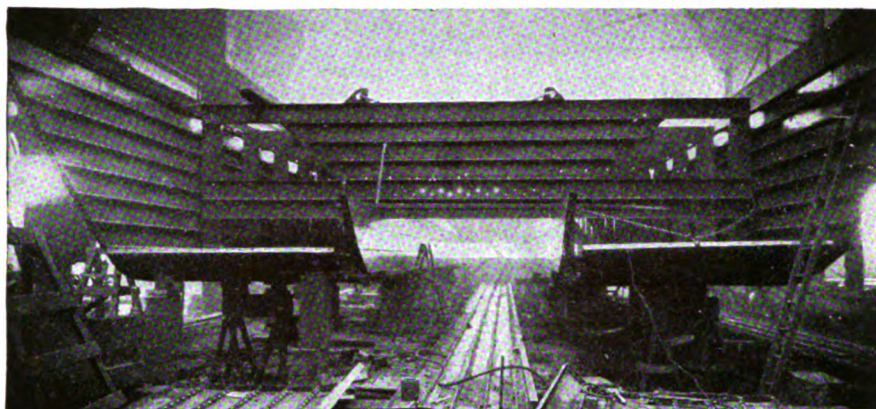
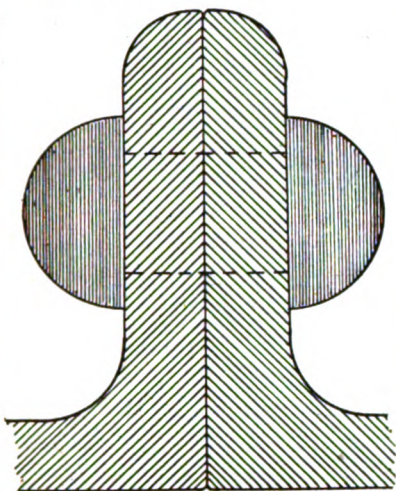
Brief Summaries of Recent Maritime Casualties—  
A Record of Collisions, Wrecks, Fires and Losses

NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
A. F. Coats	Aug. 2	Fire	Ponce	Total loss	Kurdistan	Sept. 4	Collision	Nr. Dungeness	Bows
Anglo Chilian	July 31	Collision	River Scheldt	Plates	Kwaiun Maru	Aug. 24	Aground	Yungking Shoal	Not stated
Affinita	Aug. 4	Collision	Off Lobos Island	Damaged	Laura Annie Barnes	Aug. 13	Aground	Middle Ground	Floated
Angela	Aug. 9	Collision	Hampton Roads	Not stated	La Placentia	Aug. 19	Collision	Off Frisco Head	Damaged
A. W. Osborne	Aug. 27	Aground	Soo	Plates—floated	Manchester Spinner	Aug. 16	Explosion	Montreal	Not stated
Amenartas	Aug. 19	Collision	Off Le Palais	Considerable	Mohiere	Aug. 19	Collision	Montevideo	Badly
Artico	Aug. 19	Aground	Belle Isle	Not stated	Mevania	Aug. 17	Ashore	London	Floated
Altengamme	Aug. 20	Ashore	Point Indio	Floated	Mar Bianco	Aug. 5	Aground	Buenos Ayres	Not stated
Beechbay	Aug. . .	Ashore	Hven	Floated	Marquesa	Aug. 12	Ashore	North Shore	Floated
Balseiger	July 30	Aground	St. Lawrence River	Floated	Mokta	Not stated	Collision	Off Dungeness	Damaged
Blanche Forsay	July 29	Aground	Off Barking	Not stated	M. C. Smith	Aug. 26	Aground	Mud Lake	Floated
British Commodore	Aug. 3	Disabled	Blanc Sablan	Not stated	Marian B.	Aug. 27	Capsized	Ashtabula	Sank
Baccarat	Aug. 9	Fire	Swansea	Engine	McKeesport	Aug. 30	Aground	Off Cove Point	Floated
Betsy Anna	Aug. 17	Ashore	Portland	Damaged	Mary Patricia	Aug. 18	Ashore	Not stated	Floated;
Berwindmoor	Aug. 31	Aground	Prawle Point	Not stated	Matthew Andrews	Sept. 8	Struck wreck	Off Colchester	leaking
Bessie	Aug. 22	Collision	Fort de France	Floated	Marte	Aug. 23	Collision	Hampton Roads	Not stated
Brask	Sept. 2	Ashore	Off Liberty	Not stated	Modig	Aug. 25	Disabled	Baltimore	Steering gear
Borinage	Aug. 19	Collision	Montreal	Floated	Metak	Aug. 23	Gale	Not stated	Sank
Bondicar	Aug. 24	Aground	Nantes	Damaged	N. B. MacPherson	Aug. 17	Aground	Lachine Canal	Floated
C. S. Robinson	Aug. . .	Aground	Off Rosherville	Floated	Nordpol	Aug. 2	Aground	Flatey Hagi	Sank
Cape of Good Hope	Aug. 21	Aground	Niagara River	Floated	Norlina	Aug. 4	Aground	Horseshoe Point	Total loss
Cawdor Castle	Aug. 21	Aground	Astoria	Not stated	Nissho Maru	Aug. 3	Stranded	Noshiro River	Not stated
Cordillera	July 30	Ashore	Conception Bay	Wrecked	Newfoundland	Aug. 17	Collision	Cuxhaven	Plated
Cheref Nour	July 31	Collision	Nr. Blythwood	Considerable	Nyassa	Aug. 15	Aground	Nr. Ponta Ver-	Not stated
Christel Vinnen	Aug. 4	Collision	Kavak	Floated	Nord Atlantic	Aug. 19	Stranded	Nr. Tenedos	Considerable
Canadian Aviator	Aug. 9	Aground	Lobos Island	Damaged	Nevada	Aug. 23	Collision	Norfolk	—Floated
Colusa	Aug. 11	Collision	Quebec	Floated	Newberne	Sept. 10	Disabled	Off Cove Point	Damaged
Capena	Aug. 11	Aground	Destruction Is.	Bows; fore-peak	Oak Branch	Aug. 13	Stranded	Negrilla Reef	Floated
Canadian Coaster	Aug. 30	Stranded	Venice	Floated	Pegaway	Aug. 5	Collision	Nantes	Not stated
Cornfields Lightship	Aug. 14	Collision	Pine Island	Floated	Pyrite	Aug. 18	Aground	Tintingue	Total loss
Cabo Corona	Aug. 14	Collision	New York	Not stated	Pere Marquette	Sept. 7	Collision	Milwaukee	Not stated
Caspar	Aug. 16	Struck dock	Nr. Bonanza	Plates; frames	No. 21	Sept. 1	Collision	Montevideo	Not stated
Covena	Aug. 16	Aground	San Pedro	Not stated	Pan America	Sept. 1	Collision	Off Salina Cruz	Engine
Cowal	Aug. 17	Aground	Gray's Harbour	Not stated	Point Fernin	Sept. 8	Disabled	Terneuzen	Floated
C. C. West	Sept. 8	Struck bot.	Perch Rock	Not stated	Ptarmigan	Aug. 23	Aground	Nr. Mobile	Floated
Cecil County	Sept. 5	Ashore	Nr. Keweenaw Pt.	Bottom	Point Reyes	Aug. 23	Ashore	Bombay	Total wreck
Concord	Aug. 26	Fire	Boca Chica	Not stated	Persia	Aug. 24	Fire	New York	Badly
Danmark	Aug. 3	Aground	Stornoway	Ashore	Quogue	Aug. 29	Fire	Off Chester, Pa.	Floated—
Dalmatia	Aug. 5	Fire	Hong Kong	Floated	Robert Luckenbach	Aug. 18	Aground	plates	Not stated
Drenis	Aug. 6	Aground	Nagara	Cargo	Regina C	Aug. 18	Collision	Petate Passage	Not stated
Diamando	Aug. 13	Collided	Teignmouth Bar	Not stated	Reina Marie Cristina	Aug. 3	Struck pier	New York	Stem
Delaware	Aug. 17	Collision	Eastham Pierhd.	Stem; plates	Romney	Sept. 1	Collision	Montevideo	Not stated
Dorothy	Sept. 8	Aground	Holtenau	Badly	Ricardo Hernandez	Sept. 6	Ashore	Nr. Havana	Not stated
Dagmar	Aug. 24	Disabled	Port Harbor	Floated	San Tiburcio	Aug. 19	Collision	Montevideo	Not stated
Eastern States	Aug. 19	Disabled	Off Oesel Island	Lost prop.	Saguache	Aug. 23	Disabled	Charleston	Engine
Eagle	Aug. 19	Collision	Mackinac Island	Engine	San Jouse	July 30	Weather	Nr. Marseilles	Sank
Egypt	Aug. 11	Stranded	Off Frisco Head	Damaged	Slavic Prince	July 30	Aground	Holland	Not stated
Etna Maru	Aug. 12	Explosion	Sulina	Floated	San Leonardo	Aug. 1	Collision	Nr. Hook of	Starboard
Eskburn	Aug. 18	Collision	Galveston	Lifeboats; deck	S. E. Calvert	Aug. 2	Aground	Quarantine	bow
Edward Luckenbach	Sept. 7	Aground	Rotterdam	Damaged	Seneca	Aug. 9	Fire	Hernosand	Not stated
Espagne	Aug. 26	Touched	Ben Davis Shoal	Floated	Silvia Mosher	Aug. 10	Struck quay	Portland	Damaged
Fernlea	Aug. 18	Aground	Off Corunna	Propeller shaft	Sneetad	Aug. 9	Struck quay	Sable Island	Total wreck
Fanny Freman	Aug. 21	Aground	Nr. Pauillac	Floated	Steel Navigator	Aug. 24	Aground	Santos	Rudder
Frecia	Aug. 11	Sank	Penguin Island	Total loss	Senat. Navigator	Aug. 9	Collided dock	Cuxhave	Floated
Fredman	Aug. 17	Aground	Off Plaitow Whf.	Floated	Str. Faith	Aug. 15	Stranded	Vancouver Har.	Considerable
F. L. Robbins	Sept. 5	Ashore	Irvine Bar	Floated; plates	Sabandja	Aug. 13	Foundered	Black Sea	Floated
Fontainebleau	Aug. 19	Fire	Bois Blanc Island	Floated	Southern Coast	Aug. 18	Collision	London Docks	Damaged
Firenze	Aug. 20	Fire	Perim	Considerable	Sosua	Aug. 28	Disabled	Off Port Morgan	Engine
Governor John Lind	Aug. 2	Ashore	Port Said	No. 2 hold	Speybank	Aug. 28	Aground	Anderson	Floated
Godfried Bueren	Aug. 2	Aground	Martha's Vineyd.	Not stated	Storviken	Sept. 6	Ashore	London	Floated
Garthloch	Aug. 3	Sbmged obi.	River Ems	Floated	San Lamberto	Aug. 19	Aground	Antwerp Roads	Floated
George L. Torian	Not stated	Aground	Portmadoc	Propeller; crank shaft	Schlesien	Aug. 20	Aground	Nr. Maassluis	Floated
Glen Sannox	Aug. 17	Collided	Nr. Brookville	Floated	Shell Mex 2	Aug. 23	Collision	Southampton	Stem; plates
Gardelaki	Aug. 21	Collision	Winton Pier	Stem	Steel Navigator	Aug. 25	Aground	Water	Floated
H. G. Hyvie	Aug. 18	Collision	Lower Bosphorus	Stern; plates	Trentwood	July 29	Aground	Cape Cod	Floated
H. H. Rogers	July 29	Aground	Petate Passage	Not stated	Tayuen Maru	Aug. 7	Fire	River Scheldt	Floated
Hull 493	July 29	Struck dock	South-West Pass	Floated	Terrebone	Aug. 25	Storm	Nr. Hankow	Total loss
Hull 494	July 29	Fire	Quebec	Damaged	Twin Sisters	Aug. 16	Ashore	Mississippi River	Sank
Haimon	Aug. 9	Fire	Quebec	Considerable	Tampa	Aug. 28	Collision	West Hartlepool	Wrecked
Harold S. Gerken	Aug. 21	Gale	Off Erie	Not stated	Treveyan	Aug. 21	Collision	Hillsborough Bay	Aground
Henrik Ibsen	Aug. 18	Collision	Rotterdam	Sank	Tove	Aug. 24	Fire	Antwerp docks	Plates
Islington	Aug. 17	Collision	Holtenau	Damaged	Tongan	Aug. 22	Disabled	Bridlington	Engine room
Inimelmann	Aug. 17	Collision	Cuxhaven	Badly	Victorious	Aug. 31	Disabled	Port Arthur	Propeller
Ida	Aug. 23	Disabled	Katthammarsvik	Not stated	Valima 2	Aug. 22	Stranded	Honolulu	Leaking
J. H. Reed	Aug. 21	Aground	Lake Huron	Floated	Valsesia	Aug. 25	Ashore	Tarbert	Engines
James C. Hamlen	Aug. 9	Fire	Portland	Damaged	Wellman De Besche	July 27	Collision	Friars Point	Floated—
Julia	Aug. 20	Capsized	Off Gothland	Not stated	West Munham	July 29	Collision	Bottom	Not stated
John Stanton	Sept. 10	Struck obj.	Soo River	Wheel; hub; tailshaft	William H. Daniels	Sept. 4	Aground	Antwerp Roads	Plates
Kamir	Aug. 3	Struck jetty	Barry	Port bow	W. D. Rees	Sept. 4	Ashore	Houston Channel	Forward
Kaikyu Maru	Aug. 29	Struck rock	Ripple Reef Shoal	plates	West Quechee	Aug. 25	Gale	Detroit River	—floated
Keren	Aug. 16	Fire	Venice	Total loss	Wm. A. Naugler	Aug. 22	Collision	Duck Island	Plates—
				Not stated	West Kasson	Aug. 24	Stranded	Louisiana Coast	—floated
								Off Liberty	Considerable
								Lobitos	Plates; stem

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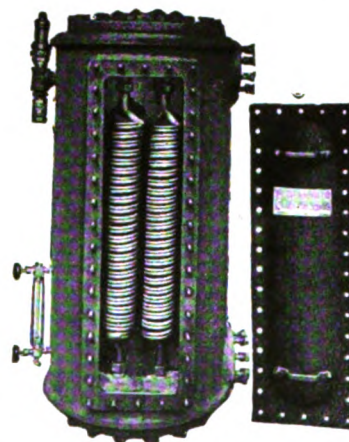
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# New Trade Publications

**CHARGING HOISTS**—What the company's hoist will do for you is the subject of a pamphlet published by P. H. & F. M. Roots Co., Connersville, Ind. It gives various uses of their charging hoist.

**OIL PUMPS**—Pumps for service on oil pipe lines and in refineries where conditions are exacting are shown in a bulletin by the Goulds Mfg. Co., Seneca Falls, N. Y.

**PHOSPHOR BRONZE**—American Brass Co., New York, has issued a folder describing this alloy, which is relatively new in metallurgical use. It gives the properties of the metal and commercial forms in which it is manufactured. Value of the folder lies in the fact little has been printed heretofore on this metal.

**DRAFT INDICATOR**—A bulletin by the Republic Flow Meters Co., Chicago, illustrates its appliances for measuring draft and pressure. The zero setting is permanent for each instrument and all readings are on one eye-level, giving the greatest possible ease of reading.

**MATERIALS HANDLING**—Electrically driven machinery for handling materials in many branches of industry is set forth in a catalog by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Information is given of principal groups of materials handling machinery, giving uses, typical outputs and electrical equipment best suited to their operation and describes Westinghouse equipment designed for such uses.

**FIRE BRICK CEMENT**—Data on the new high temperature fire brick cement developed by the Chicago Fire Brick Co., Chicago, is given in a 4-page pamphlet. The cement is used to bond furnace walls into a homogeneous mass and is said to withstand high temperatures, spalling and abrasion.

**WELDING RODS**—A second of its series of booklets on welding rods and their proper use has been issued by the Chicago Steel & Wire Co., Chicago, through its research department. It deals with the effect of surface materials on steel rods and the resulting

welds. The booklet discusses proper use of rods to obviate possible ill effects of these surface materials, which are a necessary result of the methods of drawing the welding wire.

**PORTABLE AIR COMPRESSORS**—Various types of portable compressors mounted on trucks or skids are described in a 80-page booklet issued by the Sullivan Machinery Co., New York. These compressors may be used for any purpose where compressed air is desired.

**REFRATORIES**—Co-operation between maker and user of fire brick, if best results are to be attained, is the message in a leaflet on fire brick issued by the Ashland Fire Brick Co., Ashland, Ky.

**BOILER TUBES**—Information on boiler tubes, causes and prevention of failure, corrosion and operating conditions, with many engineering data are included in a booklet issued by the Boiler Tube Co. of America, Pittsburgh.

**OIL ENGINES**—Ingersoll-Rand Co., New York, has issued a bulletin describing its direct-injection oil engines for all purposes. The text consists of technical data and details of a number of engines and illustrations cover a large number of plant layouts, installation views, diagrams and engine details.

**STEAM ECONOMY**—Republic Flow Meters Co., Chicago, has issued a publication embodying the experience of its engineering force covering methods for reducing steam costs. It is profusely illustrated by half-tones of actual installations of its meters for keeping close check on boiler conditions, to give notice of needed corrections. Application of its methods to various industrial lines is suggested. A section is devoted to installation, use and care of these meters.

**PUMPS**—Horizontal single suction centrifugal pumps and reciprocating deep well pump heads are described in two bulletins by Dean Hill Pump Co., Anderson, Ind. Each contains full details of construction and application,

with illustrations of the pumps and parts, and such technical data as will assist the user in choosing and applying the pumps to his needs.

**WELDING AND CUTTING**—A catalog has been issued by the Alexander Milburn Co., Baltimore, Md. It is pocket size and covers the welding and cutting devices and parts manufactured by that company.

**PNEUMATIC TOOLS**—Chicago Pneumatic Tool Co., New York, has issued two circulars, one covering its universal drills, screw drivers, nut runners and tappers, the other a new type of grinder. The devices are illustrated and specifications given.

**ARC WELDING**—The General Electric Co., Schenectady, N. Y., has issued a catalog showing the adaptability of electric arc welding. The catalog is illustrated by many views of materials welded by this process at the plant of the firm.

**CONVEYORS**—Moving materials in various containers, loading or unloading, piling and tiering are described in a well-conceived catalog by the Standard Conveyor Co., North St. Paul, Minn. A wide diversity of duty possible by the equipment made by this company is shown in the illustration and in the text is much information as to savings over manpower for the same purpose.

**VALVES**—Homestead Valve Mfg. Co., Homestead, Pa., has issued a current catalog of its line of valves, containing its full line, which includes a number of additions developed during the past year.

**REFRACTORY CEMENT**—A booklet describing its refractory cements has been issued by the Norton Co., Worcester, Mass. Application of the several grades are suggested and advantages from use are given.

**OXYGEN**—A bulletin by the Air Reduction Sales Co., New York, emphasizes necessity for purity of that gas in metal cutting operations and presents a fac simile of the guarantee tag on its cylinders.

**MONEL METAL**—A buyer's guide to manufacturers of various articles of monel metal has been compiled and published by the International Nickel Co., New York, for the guidance of those who desire this material. The list is classified by products and covers a wide range. Included in a list of literature on monel metal and nickel made available by this company.

## Business News for the Marine Trade

Fitzsimmons & Cornell Dredge & Dock Co., 10 South LaSalle street, Chicago, has been incorporated with \$1,092,600 capital to carry on construction business by Merritt E. Bragdon, Paul V. Harper, and Edward D. McDougal Jr.

American Navigation Inc. has been incorporated at St. Louis by T. D. Drury, 5621 Waterman street.

Illinois Watersay Barge & Dock Co., 38 South Dearborn street, room 1400, Chicago, has been incorporated with \$175,000 capital to build, own and operate boats and barges by R. S. Tuthill, Harold Beacom and M. E. Burgess. Winston Strawn & Shaw, First National Bank building, are attorneys.

General Wreckage & Salvage Co. has been incorporated in New York with \$50,000 capital to operate wrecking and salvage vessels. by C. King, B. Bendizen. W. H. Darrow, 79 Wall street, is attorney.

Diesel Towing Line, Hemstead, N. Y., has been incorporated with 500 shares no par value to conduct a navigation enterprise by

J. R. Stewart, C. P. Schroetter and W. Shea Folwy & Martin, 64 Wall street, New York, are attorneys.

Waterfront Service Corp. and Ravese Stevedoring Corp. have been incorporated in New York with \$10,000 capital each, by B. Kolden, D. Lieberman and A. Traub. A. M. Dreyer, 44 Court street, is attorney.

Pensacola Shipbuilding & Engineering Corp., Pensacola, Fla., is having plans made for a shipbuilding and repair plant to cost \$250,000. E. M. Elliott, Pensacola, is in charge.

Sabine Towing Co., Port Arthur, Tex., has been incorporated with \$125,000 capital to operate on the Houston canal.

Teche-Grand Lake Navigation Co., Inc., Franklin, La., has been incorporated with \$15,000 capital by Wilbur K. Kramer, Franklin, La., and Harry P. Williams, Patterson, La.

Oceanside Dredge & Dock Co., Hempstead, L. I., has been incorporated with 200 shares common stock of no par value by O. H. Tuthill, C. H. Tuthill and P. J. Watson. Wal-

lace & Patterson, Rockville Center, are attorneys.

Bee Line Ferry, St. Petersburg, Fla., has increased its capital to \$250,000 and will establish ferry service between Pinellas Point and Piney Point, Manatee county.

Tropical Trading & Transportation Co., 308 Exchange place, Baltimore, has been incorporated by Walter W. Bowe and Frederick W. Strow.

Kelly Barge line, Charleston, W. Va., has let contract to K. E. Reed, South Charleston, for construction of a river terminal at Evansville, Ind., to cost \$60,000.

New York Ontario Ferries, Buffalo, has been incorporated with \$250,000 capital by J. H. Pardee, L. W. Eyeington and A. E. Murphy. Stanley & Gidley, Buffalo, are attorneys.

Minneford Yacht yard, New York, has been incorporated with \$10,000 capital by R. S. Sayers, R. T. Tabanda and A. E. Ostrander. Sayers Bros., 67 Liberty street, New York, are attorneys.